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OF

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CONTENTS.

Part I. Original Essays.

Page.

ART. I.—Contributions to Ophthalmic Medicine and Surgery. By George Smith, M. D., Principal of the Medical College; Professor of Ophthalmology, and Superintendent of the Eye Infirmary 1

ART. II.—American Notes. By Henry King, A.B., M.B., C.H.L., Ex-Scholar, Senior and Junior Moderator, Trinity College, Dublin; L. M. Rotunda Hospital, Dublin; Assistant Surgeon, Madras Army 44

ART. III.—Special Report as to the relative effects of Hill and Plains Stations on the sanitary welfare of the Soldiers, 74th Highlanders. By Surgeon-Major James Macbeth, M.D., H. M. 74th Highlanders 62

ART. IV.—Notes upon the Snakes of the Madras Presidency. By Captain R. H. Beddome, Officiating Conservator of Forests 207

ART. V.—On some of the Dangers of Phymosis. By Henry C. Brodrick, M.D., Assistant Surgeon, 1st Central India Horse 208

ART. VII.—Note on the Magnetic Oxide of Iron as a means of Purifying Water. By J. Mayer, Esq., Deputy Inspector-General of Hospitals, Presidency 215

ART. VIII.—A General and Medical Topographical Report of the Madras District. By J. Shortt, M.D., General Superintendent of Vaccination, and late Zillah Surgeon, Chingleput 222

Page.

ART. IX.—Introductory remarks to a Course of Lectures on Diseases of the Eye,—Session 1865-66. By George Smith, M.D., Principal of the Medical College, Professor of Ophthalmology, and Superintendent of the Eye Infirmary.. 268

ART. X.—Typhoid Remittent Fever at Bangalore. Report by Deputy Inspector-General of Hospitals E. Balfour... 285

ART. XI.—Annual Report of the Engineer Establishment, Upper Godavery, for the year 1865. By Assistant Surgeon J. M. Houston, M.D., in Medical charge Upper Godavery Works.. 294

ART. XII.—American Notes. By Henry King, A.B., M.B., C.H.L., Ex-Scholar, Senior and Junior Moderator, Trinity College, Dublin; L. M. Rotunda Hospital, Dublin; Assistant Surgeon, Madras Army.............................. 324

Part II. Reviews & Notices of Books.

1.—A Hand-book of Uterine Therapeutics. By Edward John Tilt, M. D., Member of the Royal College of Physicians, &c. &c. Second Edition. London: John Churchill and Sons. 1864. Foolscap, 8vo., pp. 318... 125

2.—A Clinical Memoir on certain Diseases of the Eye and Ear, consequent on Inherited Syphilis; with an appended chapter of Commentaries on the Transmission of Syphilis from Parent to Offspring, and its more remote consequences. By Jonathan Hutchinson, F. R. C. S., Senior Assistant Surgeon and Lecturer on Surgery at the London Hospital, &c. &c. London: John Churchill, 1863. 8vo., pp. 259.. 126

3.—On the Nature, Pathology and Treatment of Puerperal Convulsions. By Richard Hodges, M.D., F. R. C. S., Author of "An Essay on Uterine Hæmorrhage." London: Churchill and Sons, 1864. Small 8vo., pp. 96. 130

4.—Report on Vaccination throughout the Presidency and Provinces of Madras, in the year 1864. Selections from the Records of the Madras Government, No. lxxxiv. Madras: Gantz Brothers, 1865. 8vo., pp. 39. 132

5.—A Popular Lecture on Vaccination. By John Shortt, M.D., F. L. S., M. R. C. P. L., &c., General Superintendent of Vaccination. Madras: Gantz Brothers, 1865. 8vo., pp. 14.. 133

Page.

6.—Surgery in Bengal : an Address to the Bengal Branch of the British Medical Association. By J. Fayrer, M.D., F. R. S. E., and F. R. C. S. E., Professor of Surgery, and Surgeon to the Medical College Hospital. Calcutta : Cutter, 1865. 8vo., pp. 32.................. 134

7.—Clinical Lectures and Reports by the Medical and Surgical Staff of the London Hospital. Vol. I. 1864. London : John Churchill and Sons. 8vo., pp. 517...... 131

8.—How to work with the Microscope. By Lionel S. Beale, M.B., F.R.S., Fellow of the Royal College of Physicians ; Physician to King's College Hospital, &c. Third edition. Illustrated with fifty-six plates, containing upwards of 250 figures, and a photographic plate. London: Harrison, 59, Pall Mall. 1865. Small 8vo., pp. 272.

The preparation and mounting of Microscopic Objects. By Thomas Davies, London. Robt. Hardwicke, 162, Piccadilly, 16mo., pp. 156................................ 343

9.—A Treatise on the Small-pox, by W. C. Maclean, Esq., M.D., modified and adapted for the Natives of India, by J. Shortt, Esq., M.D. Translated into Canarese, by S. Arokeum Pillay, 2nd Dresser, Medical Establishment, Mysore Commission. Bangalore, Mysore Government Press, 1865. Pamphlet, pp. 34......................... 346

Part III. Medical Miscellany.

No. 1.—Rupture of the Abdominal Aorta, with remarks. By Lestock W. Stewart, Esq., Surgeon, 13th Regiment Native Infantry.. 138

No. 2.—Two cases of Cancer of the Neck of the Uterus. By John Shortt, M.D., F.L.S., M.R.C.P.L., &c., General Superintendent of Vaccination......................... 141

No. 3.—A Case of Hæmatemesis. By D. C. McAllum, M.D., Assistant Surgeon, 5th Infantry Hyderabad Contingent, and in Medical charge Staff and Details at Bolarum.. 144

No. 4.—A fatal case of Acute Hepatitis following an Injury, and resulting in Abscess ; large hæmorrhage from the Bowels ; ulceration of the mucous coat of the Colon at its hepatic flexure. By W. N. Chipperfield, Acting Physician, General Hospital...................... 148

Page.

No. 5.—A fatal case of Typhoid Fever, with Maculæ, Diarrhœa, Grumous stools, &c.; complicated with Ulceration of the Cœcum and Abscess of the Liver. By W. N. Chipperfield, Acting Physician, General Hospital. 157

No. 6.—
- Meteorological Results for January 1865......... 163
- Do. do. for February 164
- Do. do. for March 165
- Do. do. for April 166
- Do. do. for May 167
- Do. do. for June 168
- Do. do. for July 169
- Do. do. for August 170
- Do. do. for September 171
- Do. do. for October 172
- Do. do. for November 173
- Do. do. for December 174

No. 7 —Cases from the Journal of the Native Infirmary, Madras, with remarks. By W. J. vanSomeren, M.D., Surgeon, 1st District 348

No. 8.—Extract from Annual Medical Report on the state of the Civil Dispensary, Chittoor, North Arcot, for the year 1865. By Assistant Surgeon W. F. DeFabeck... 351

No. 9.—Extract from Annual Medical Report of the Civil Dispensary at Salem, for the year 1865. By Assistant Surgeon H. D. Roberts, M.D................. 352

No. 10.—Chlorodyne a remedy for Cholera..................... 353

No. 11.—Paralysis of the Tongue. Extract from Annual Report of the Civil Dispensary, Berhampore, for the year 1865. By Assistant Surgeon R. W. Cockerill, dated 1st January 1866....... 356

No. 12.—Note. By Geo. Mackay, M. D., Surgeon-Major. Will a child, born after the mother has had Small-pox, and contracted after she has conceived, be liable to contract the disease ?... 356

No. 13.—Case of Abscess of the Liver. By Thomas Croudace, Esq., M.R.C.S., &c. Assistant Surgeon, Madras Army.. 357

No. 14.—Extracts from the Medical Journals of the General Hospital, Madras. By W. N. Chipperfield, Acting Physician, General Hospital, and Professor of Medicine and Clinical Medicine, Madras Medical College 360

No. 15.—
- Meteorological Results for January 1866......... 381
- Do. do. for February 382
- Do. do. for March 383

Page.

Part IV. Medical Intelligence.

1.—A Chalybeate Spring at Bangalore.......... 175
2.—Madras Apothecaries' Society.............................. 190
3.—The New Sydenham Society......... 193
4.—Order of the Madras Government on the Report of the Civil Hospitals and Dispensaries throughout the Madras Presidency, for the year 1863...... 197
5.—The Pay of Civil Surgeons.................. 202
6.—The Madras Medical College.......................... ... 203
7.—The Army and Navy Medical Department.... 203
8.—The Army and Navy Medical Department............... 384
9.—The Report of the Committee at the Admiralty......... 391
10.—The New Sydenham Society.............................. 393
11.—"They manage these things better in France"............ 395
12.—Annual Report of the Madras Medical College, 1854-65 398
13.—Books received.................... 419
14.—Periodicals received...................................... 419

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THE MADRAS

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JANUARY 1, 1866.

PART I.

ORIGINAL ESSAYS.

ART. I.—*Contributions to Ophthalmic Medicine and Surgery.* By GEORGE SMITH, M.D., Principal of the Medical College; Professor of Ophthalmology, and Superintendent of the Eye Infirmary.

(Third Series.)

THE object of the following contribution is essentially a practical one. It is, to furnish some materials towards a solution of the hitherto unsolved question—Is extraction a warrantable operation for the cure of cataract in the case of the native of Southern India? This question is one of great importance, and I shall esteem myself fortunate if the experience recorded in the subjoined table be found, in any way, to bear practically upon its solution.

A table showing the results of 50 *cases of Cataract in Native*

No.	Name.	Age.	Sex.	General health.	Kind of cataract.	Which more advanced.	Which lens extracted.	Date of extraction.	Upper or lower section.
								1863	
1	Bastian...........	70	M	Good ...	Mixed ; non str(1)	Right ..	Right ..	25 Aug.	Upper.
2	Vencatachellum	46	M	Fair ...	Mixed ; non str,	Right ...	Right ...	28 Aug.	Upper.
3	Luchmee.........	55	F	Good ...	Mixed ; non str.	Right ...	Right ...	16 Sept.	Upper.
4	Paupah...........	58	F	Bad ...	Mixed ; non str.	Right ...	Right ...	24 Sept.	Upper.
5	Nynatha.........	50	F	Good ...	Mixed ; striated.	Left ...	Right ...	24 Sept.	Upper.
6	Polliam...........	66	F	Fair ..	Cortical ; non str.	Both equally advanced	Right ...	24 Sept.	Upper.
7	Luchmunen......	58		Bad ...	Cortical ; striated.	Right ...	Right ...	24 Sept.	Upper.
8	Francis...........	60	M	Good ; habits irregular.	Nuclear.	Right ...	Right ...	24 Sept.	Upper.
9	Arnagherry......	60	M	Good ...	Mixed ; non str.	Left ...	Left ...	29 Sept.	Lower.

1. *i. e.*, Non striated periphery.

of the Madras Presidency, treated by extraction.

Complications, &c., during the operation.	Affections following the operation.	Result.	Remarks.	No.
None.	Minute ulcer at edge of flap with slight vascular congestion. Slight film in pupil.	Successful.	Vision good.	1
None.	None....................	Successful.	Vision very good.	2
None.	Very minute prolapse of the iris.	Successful.	Vision very good.	3
None.	An attack of catarrhal ophthalmia in both eyes.	Successful.	On June 22nd the anterior operation for solution was performed, and repeated on August 14th. No decided progress being made, the lens was extracted on the 24th Sept. Vision good.	4
None.	Slight keratitis.........	Successful.	The left lens had been depressed by a native operator. Sight nearly gone. Vision useful.	5
Eye small; deep-set. Pupil contracted. Pupil enlarged with iris scissors; posterior synechia. Lens scooped out.	None....................	Unsuccessful.	August 1st, anterior operation for solution was performed on left lens. August 14th, operation repeated. Retinæ of both eyes totally insensible.	6
Palpebral fissure small, eye deep-set.	Purulent infiltration of cornea, atrophy of the globe.	Unsuccessful.	August 1st, right lens acted upon by needle for solution. Catarrhal ophthalmia. 24th, operation repeated. Extracted lens, had a small amber nucleus.	7
Patient unsteady; corneal flap rather small.	Prolapse of iris, exudation of lymph into pupil. January 22nd 1864, operation for artificial pupil.	Unsuccessful.	This patient left hospital at a time when the eye was beginning to appreciate light, and when some hope of restoration of vision was entertained.	8
Base of orbit of very contracted dimensions.	Slight catarrhal ophthalmia; slight keratitis, limited to edge of section. Union of section arrested for a time.	Successful.	This patient was very careless of his eye. He finally left hospital with good vision.	9

A table showing the results of 50 cases of Cataract in A

No.	Name.	Age.	Sex.	General health.	Kind of cataract.	Which more advanced.	Which lens extracted.	Date of extraction.	Up lo sec
								1863	
10	Moothoo........	60	M	Good ...	Mixed; non str.	Right ...	Right ...	12 Oct.	Up
11	Vencatachellum (vide case 2.)	46	M	Fair ...	Mixed; non str.	Right ...	Left ...	12 Oct.	Low
12	Poonen...........	65	M	Bad ...	Mixed; non str.	Left ...	Left ...	12 Oct.	Low
13	Peermah.........	68	F	Bad ...	Mixed; non str.	Left ...	Right ...	12 Oct.	Up
14	Veerasawmy....	40	M	Good ...	Cortical; non str.	Left ...	Left ...	5 Nov.	Low
15	Seeneevassen ...	54	M	Fair ...	Nuclear.	Right ...	Left ...	5 Nov.	Low
16	Kistapen.........	54	M	Bad ...	Mixed; faintly striat.	Left ...	Left ...	5 Nov.	Low
17	Ramiah...........	60	M	Bad ...	Mixed; non str.	Right ...	Right ...	5 Nov.	Up
18	Nynacharry......	54	M	Bad ...	Mixed; striat.	Right ...	Right ..	11 Dec.	Up

:dras Presidency, treated by extraction—(Continued.)

ations, &c., the op era- ion.	Affections following the operation.	Result.	Remarks.	No.
....	Slight conjunctival congestion.	Successful.	Vision good.	10
....	Slight prolapse of iris; an attempt to re-place it increased it. Lid acts injuriously upon it.	Successful.	Vision good, and daily improving.	11
m. No diffi- r complica-	Purulent infiltration of the cornea. Iritis. Cornea became opaque.	Unsuccessful.	An old anemic man.	12
....	Keratitis set in on 3rd day, effusion into anterior chamber, purulent infiltration of cornea, prolapse of iris.	Unsuccessful.	A risen cataract after depression (native operation) in left eye. Two attempts at artificial pupil were made, but without success.	13
muscular ; lens in e shot out some force, panied with le vitreous ır.	None.	Successful.	Vision good. Pupil large and somewhat ovoidal.	14
much atro- and of a black colour, hot out, with e vitreous, by pasm of the es.	Slight keratitis; exudation extended from edge of section to the pupil; edge of section sloughed, pupil contracted.	Successful.	The right lens had, a year before, been operated on for solution. The operation had failed. Vision good.	15
ntracted, iris d on escape s; some vi- escaped.	Keratitis, exudation extending from section to the pupil. Pupil blocked up.	Unsuccessful.	Patient absconded.	16
fell forward, the section completed ut injury to	Prolapse of iris. Has a severe phthisical cough of an asthmatic kind.	Successful.	The prolapse resulted from a severe fit of coughing, and for some days increased gradually. Vision good.	17
....	None.	Successful.	A spirit drinker. Vision good.	18

A table showing the results of 50 *cases of Cataract in Natives*

No.	Name.	Age.	Sex.	General health.	Kind of cataract.	Which more advanced.	Which lens extracted.	Date of extraction.	Upper or lower section.
19	Bauliah............	60	M	Fair ...	Nuclear and glaucomatous	Left ...	Right ...	1864 2 Jan.	Upper.
20	Vencataroyaloo.	40	M	Bad ...	Mixed; non str.	Right ...	Right ...	2 Jan.	Upper.
21	Lydia...............	16	F	Good ...	Cortical.	...	Left ...	5 Feb.	Lower.
22	Ratha Bhaee....	50	F	Good ...	Nuclear.	Left ...	Left ...	12 Feb.	Lower.
23	Appoo Moodliar	60	M	Bad ...	Mixed; non str.	Right ...	Right ...	16 Mar.	Upper.
24	Nunnee Bee......	48	F	Good ...	Cortical; non str.	Right ...	Right ...	21 Mar.	Upper.
25	Annasawmy.....	52	M	Fair ...	Mixed; non str.	Right ...	Right ..	12 Apr.	Upper.

f the Madras Presidency, treated by extraction—(Continued.)

Complications, &c., during the operation.	Affections following the operation.	Result.	REMARKS.	No.
None..................	Keratitis; purulent infiltration of cornea. Prolapse of iris. Insensibility of the retina.	Unsuccessful.	This patient ought not to have been operated on.	19
None..................	Keratitis; pus in anterior chamber; chemosis; ophthalmitis.	Unsuccessful.	A spirit drinker.	20
Vitreous slightly diffluent; lens removed by Schuft's scoop; no difficulty.	Inflammation of the edges of the section.	Successful.	A year before both lenses had been reclined; right pupil irregular and adherent to opaque mass; risen lens not adherent to the iris in the left eye. Vision good.	21
Deep-set eyes; no difficulty or complication.	Conjunctivitis; keratitis; band of exudation passes from inner margin of section to the pupil. Pupil contracted considerably.	Successful.	Had catarrhal ophthalmia before the operation. Vision useful, but field limited.	22
None..................	Edges of section ulcerated slightly; cicatrix opaque.	Successful.	A weak, anemic, emaciated old man. The cataract had a cortical look, and was acted upon twice by the needle; absorption having failed, the lens was extracted through a small incision by Schuft's scoop. Vision good.	23
None..................	None.	Successful.	The anterior operation for solution was performed thrice upon the lens before extraction. The lens was removed by a limited section. Vision good.	24
Slight posterior synechia; eye deep-set, capsule adherent to iris; on removal, some vitreous humour escaped.	Conjunctival congestion.	Successful.	Had suffered from syphilis. A troublesome patient, who did his eye but little justice. He absconded. Vision useful.	25

A table showing the results of 50 cases of Cataract in Natives

No.	Name.	Age.	Sex.	General health.	Kind of cataract.	Which more advanced.	Which lens extracted.	Date of extraction.	Upper or lower section.
26	Seeva Ram......	70	M	Fair ...	Mixed; non str.	Left ...	Right ...	1864 12 Apr.	Upper.
27	Nella Moothoo.	65	M	Fair ...	Nuclear.	Left ...	Right ...	22 Apr.	Upper.
28	Luchmoo.........	52	F	Good ...	Mixed · striat.	Left ...	Left ...	23 Apr.	Upper.
29	Moothien.........	72	M	Bad ...	Mixed; non str.	Right ...	Right ...	26 Apr.	Upper.
30	Ratha Bhaee.... (case 22.)	50	F	Good ...	Nuclear.	Left ...	Right ...	28 Apr.	Upper.
31	Moothee..	54	F	Good ...	Mixed; non str.	Right ...	Left ...	18 May	Upper.
32	Vencatachellum	54	M	Good ...	Mixed; non str.	Left ...	Left ...	31 May	Lower...

dras Presidency, treated by extraction—(Continued.)

tions, &c., he opera- on.	Affections following the operation.	Result.	REMARKS.	No.
....	Outer groove of section slow in filling up.	Successful.	The left eye had been operated on 10 years before for solution. Vision was lost; cornea opaque. Vision good.	26
....	Film of capsule in pupil; kerato-iritis; exudation in the area of the pupil. Anterior chamber nearly filled with lymph. Cicatrix of cornea has a fatty look.	Successful.	The left lens had been depressed by a native operator. Vision nearly gone. The depressed lens has risen. Useful vision was restored to the right eye on lacerating the film in the pupil.	27
....	A little capsule in area of pupil.	Successful.	The left lens had been twice operated on for solution, but no absorption followed. Vision useful and good.	28
....	Keratitis; chemosis; general opacity of cornea; cornea cleared, except centrally. Perception of light; no vision.	Unsuccessful.	An old man, anemic, with unhealthy skin and feeble vitality. This case ought not to have been operated on.	29
....	Catarrhal ophthalmia; kerato-iritis; pupil blocked up with fine membrane, which was acted upon by the stop needles.	Unsuccessful.	This woman had deep-set eyes, a small palpebral fissure and chronic ophthalmia tarsi.	30
rygium in ye; small left. Eye, t. Palpe-sure small; knife used n capsule th some vi-escaped.	Slight congestion of the sclerotic. Slight weakness of the cicatrix.	Successful.	Albinismus of skin of the lids of both eyes. Vision very good. Pterygium has disappeared.	31
....	Inflammation of edges of section; adhesion by first intention interfered with.	Successful.	Vision good.	32

A table showing the results of 50 cases of Cataract in Natives

No.	Name.	Age.	Sex.	General health.	Kind of cataract.	Which more advanced.	Which lens extracted.	Date of extraction.	Upper or lower section.
33	Miriam Bee......	64	F	Fair......	Mixed; non str.	Right ...	Left ...	1864 5 Sept.	Lower ...
34	Annamallay.....	58	M	Good ...	Mixed; non str.	Right ...	Left ...	14 Sept.	Lower ...
35	Chowreemoothoo	64	M	Bad......	Mixed; str.	Left ...	Left ...	9 Oct.	Lower ...
36	Anthony.........	58	M	Bad......	Nuclear	Left ...	Left ...	9 Oct.	Lower ...
37	Vencatamah. ...	45	F	Good ...	Mixed; striated.	Left ...	Left ...	16 Oct.	Lower ...
38	Miriam Bee ... (case No. 33.)	64	F	Fair......	Mixed; non str.	Left ...	Right ...	29 Oct.	Upper...

f the Madras Presidency, treated by extraction—(*Continued.*)

Complications, &c., during the operation.	Affections following the operation.	Result.	REMARKS.	No.
No difficulty or complication. The cornea cut soft, and after extraction of the lens the flap fell back with an anterior concavity.	Sub-acute keratitis...	Successful.	A poor, old, emaciated woman. Vision excellent.	33
None..................	Very minute linear prolapse, a black line shewing the presence of the iris-tissue between the lips of the section.	Successful.	Vision very good.	34
The capsule blocked up the pupil after removal of the lens, and in taking it away with the iris-forceps a little vitreous escaped.	Fever. Cornea infiltrated with pus. Atrophy of eye-ball	Unsuccessful.	A feeble and emaciated old man of dissipated habits.	35
None..................	Union of section rather slow; a little capsule in the pupil.	Successful.	A spirit drinker. Vision good.	36
None..................	Slight prolapse of iris.	Successful.	She returned with an attack of catarrhal ophthalmia of left eye. The cicatrix became enfeebled, and the curve of the cornea altered slightly. She was discharged with useful vision.	37
Eye deep-seated; mechanical difficulty in consequence. Lens in its capsule with a little vitreous escaped. The corneal flap was folded down by the lid.	The lower lid, from swelling of its tissues, became somewhat inverted and irritated the eye and the section. Distorted pupil, probably from iritis.	Unsuccessful.	Vision existed but to a limited extent when this patient left hospital.	38

A table showing the results of 50 *cases of Cataract in Natives*

No.	Name.	Age.	Sex.	General health.	Kind of cataract.	Which more advanced.	Which lens extracted	Date of extraction.	Upper or lower section.
								1864	
39	Moorgapen... ...	40	M	Bad... ...	Nuclear.	Left ...	Left ...	10 Nov.	Lower ...
40	Ayamah...	59	F	Bad......	Mixed; non str.	Both simultaneously.	Left ...	26 Nov.	Lower ...
41	Veerappen	60	M	Bad... ...	Mixed; non str.	Right ...	Left ...	26 Nov.	Lower ...
42	Chanee...	68	M	Bad... ...	Mixed; non str.	Both simultaneously.	Right ...	26 Nov.	Upper ...
43	Cunnyamah ...	54	F	Good ..	Mixed; non str.	Left......	Left......	10 Dec.	Lower ...
44	Veerappen... ... (case 41.)	60	M	Bad	Mixed; non str.	Right ...	Right ...	23 Dec.	Upper ...

***Madras Presidency, treated by extraction*—(*Continued.*)**

plications, &c., ing the operation.	Affections following the operation.	Result.	REMARKS.	No.
t pressure required to start the s; the iris was ised during the sage of the lens.	Corneal section united, then opened again; its edges ulcerated. The aqueous humour drained away through a fistula. All means failed to cause adhesion of the edges of section. Rest of cornea clear.	Unsuccessful.	Looks older than his reported age; a spirit drinker. On leaving hospital, this patient had just vision enough to see to find his way about.	39
....	Inaction of edges of section, with tendency to ulceration. Prolapse of iris. Pupil contracted. Fistula of the cornea. Anterior synechia. Cicatrix broad, but not firm.	Unsuccessful.	An old anemic woman. An artificial pupil may be formed by and by.	40
....	None.................	Successful.	A pensioned Sepoy in very poor circumstances, anemic and emaciated.	41
all portion of s fell across the ge of the knife d was snipped rough.	None.................	Successful.	The left lens had been depressed by a native operator. All vision gone. Patient a dissipated miserable-looking man. Vision very good.	42
e................	Slight prolapse; incorporation of prolapse with edges of section slow.	Successful.	Vision good.	43
siderable ocular asm from timidity. The lens, in its psule, with some itreous passed at with a jerk.	The edges did not adhere rapidly; slight tendency to ulceration. Catarrhal ophthalmia attacked both eyes.	Successful.	Vision of both eyes good.	44

A table showing the results of 50 *cases of Cataract in Natives*

No.	Name.	Age.	Sex.	General health.	Kind of cataract.	Which more advanced.	Which lens extracted.	Date of extraction.	Upper or lower section.
								1865	
45	Vencatasawmy.	65	M	Fair......	Nuclear.	Neither more advanced.	Left......	17 Jan.	Lower...
46	Vaimblyamah ..	68	F	Bad... ...	Glauc.(1) cataract.	Right...	Left......	17 Jan.	Lower...
47	Sithambarum..	68	M	Good ...	Mixed; non str.	Left......	Right ...	16 Feb.	Upper...
48	Coomarappen...	54	M	Fair... ..	Nuclear.	Right ...	Left ...	16 Feb.	Lower ...
49	Pursooramen ..	58	M	Good ...	Mixed; non str.	Right ...	Left ...	23 Feb.	Lower...
50	Chinnamah	60	F	Bad... ...	Mixed; non str.	Right ...	Left ...	23 Feb.	Lower ...

(1) Glaucomatous Cataract.

adras Presidency, treated by extraction—(Continued.)

ications, &c., g the operation.	Affections following the operation.	Result.	REMARKS.	No.
ı rather small, l not, however, ire to be en- ed.	None...	Successful.	Has been a spirit drinker. Good vision.	45
was staphylo- f the sclerotic e lower aspect ie eye-ball. No ulty or com- tion in the ation.	Subacute congestion of the eye.--Retina almost insensible to light.	Unsuccessful.	An old, emaciated, poor woman. Right eye atrophied, and vision gone. Left eye with nuclear cataract, and chronic glaucoma. *This patient ought not to have been operated on.*	46
....	Prolapse of iris. Pupil a little tucked up.	Successful.	Vision good.	47
et eye. Muscu- spasm. Wire ulum insert- and extraction ormed with- difficulty.	Cornea infiltrated with pus. Slight uneasiness and itching occurred in the eye, on the night after the operation, to relieve which he rubbed the injured organ very freely.	Unsuccessful.	An old, frail, restless man. I think this case would have done well, had the old man been more careful.	48
to spasm of muscles the speculum used. No er difficulty. lens was loos- d by the spasm.	Very slight prolapse of iris.	Successful.	The right lens was depressed 18 months ago; vision is almost lost. Vision good.	49
....	Slight delay in union of section; slight tendency to ulceration at one point.	Successful.	An old, emaciated, frail woman with shaking palsy of the head. Vision good.	50

The poorer class of natives considered as patients.

Natives of the lower classes constitute a majority of the patients of the Eye Infirmary. In such patients, when compared with Europeans, there are mental and physical peculiarities deserving of notice, which must be recognized intelligently before a correct estimate can be formed of the success or want of success which may attend the Medical or Surgical treatment of their diseases.(1) The first point which, perhaps, attracts attention, is the great obtuseness of sensibility of the nervous system of the poorer classes of natives. Diseases of the eye and operations upon it cause far less discomfort and pain to the native than to the European ; hence a great difference is observed between the type of subjective symptoms as they occur in the native, and as they are laid down in works on Ophthalmic Medicine and Surgery, when the experience recorded has been founded upon European practice. In the case of the native, the presence, for example, of a foreign body, is not always a cause of discomfort ; he allows, moreover, his eye to be freely handled, and strong collyria to be applied to the conjunctiva without expressing much uneasiness, and he frequently presents himself at hospital with eyes and eyelids in a state of filth and neglect, which would be totally intolerable to the poorest European.

This bluntness of sensibility is further seen in the little tendency exhibited by one eye to resent the diseased action of the other, and in the indisposition manifested by the general system to sympathize with local disease. A similar hebetude affects the mind ; sensibility has not been developed by education ; to the poor native the present is everything, the future nothing ; he has little forethought, and, consequently, is but little troubled with care or anxiety as to results and consequences. With diseased eyes and gradually impairing vision, the native performs his day's work for his day's wage, and goes on undisturbed so long as he has vision enough left in one eye to perform what is absolutely necessary. When vision fails, and he can no longer

(1.) The subject of the influence of race on the results of Surgical operations is a very interesting one. Indian Surgeons are thoroughly familiar with this influence, as it affects the natives of this country, and have no hesitation, when needs be, in breaking through " Principles" of Medicine and Surgery, which, however applicable to Europe, they know at times to be inapplicable to 150 millions of the human race. M. Chauffard has lately called attention to the influence of race on the results of Surgical operations as between France and England.—Vide *Medical Times* and *Gazette*, Nov. 7, 1863, p. 494.

earn his daily food, he betakes himself to a native operator, or he presents himself for admission to hospital. In hospital, so long as his wants are provided for, he makes himself both comfortable and contented under circumstances which, to an European, would be full of gloom and anxiety. Sufficient food, a little arrack, good shelter and daily betel, a reasonable liberty of movement and undisturbed permission to sleep whenever so inclined, are present blessings fully appreciated by him, and, as to the rest, he does not over-distress himself with the apprehension that he may have to leave the hospital blind, to beg in the bazaars his daily bread.

Poor, anemic, and ill-fed ; often the victim of intemperance, syphilis, and mercury ; frequently strumous and covered with itch, his system does not warrant and will not tolerate any treatment of a depressing kind ; on the other hand, his vital powers respond rapidly and remarkably to the support afforded by good diet and arrack, which latter is to him both food and stimulus. Inflammatory action in such a constitution often manifests an asthenic tendency, and runs rapidly to destruction of tissue, unless the crisis can be tided over with good food, tonics, and stimulants.

At a time of life when the European is in his prime, the native shows evidences of old age and of senile marasmus of tissue ; grey hair, wrinkled lack-lustre skin, cataractous lenses, and arci-seniles testify that the native is older *pathologically* than the European of the same age.(2)

As a patient, the native is afraid of operations, and so timid that, if the day of operation be fixed upon beforehand, he will, on getting an inkling of the fact, abscond from hospital ;(3) but if he be taken to the operating room without warning, no operator could desire to have a more quiet, resigned, and docile patient ; he retains his presence of mind, exhibits little fear or alarm, and, in the case of operations on the eye, seldom, if ever requires the administration of chloroform.(4) The operation over, he is quite tranquil ; no anxiety depresses him, and he would be a

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(2.) The poorer native at 40, *is the pathological equivalent* of the European at 55 or 60 years of age.

(3.) This is the objection to Rule 4, Section 13 of the Medical Code, which fixes the operation days to Mondays.

(4.) Natives are less steady when *a second* operation has to be performed.

model patient, were it not for his provoking want of common sense. He will, for example, without thought of consequences, remove the straps or bandage from the eye operated on, and will use the injured organ or handle it roughly, although he has been repeatedly assured and warned that such imprudence must lead to the total destruction of the organ. He has much patience and endurance, and, except from his want of common sense, gives but little trouble.

The educated native of the better class, on the other hand, has a type of constitution more resembling that of the European. The sensibility of the nervous system is in him developed by education, pain is more acutely felt, and the system, as a whole, is more prone to sympathize with local disease.(5)

The patients admitted to hospital for the purpose of undergoing the operation of extraction are either aged and anemic, or aged and cachectic. As a rule, they require rest, good food, and stimulation before the operation is performed, as well as during the whole period which intervenes between the operation and their final discharge from hospital. With good diet and stimulants, the eye of the aged patient, even when anemic and suffering from senile marasmus, stands a fair chance ;(6) but the chances of success are more or less against those who have been spirit-drinkers to excess, or whose blood has been poisoned with mercury, syphilis, &c. Patients from the country are generally more hopeful cases than those from Madras itself, because less addicted to the debilitating habits and vices of city life, and less likely to be the victims of mercury, drink, and enthetic diseases.

Results of extraction.

Before proceeding to analyze the results exhibited by the table of cases above given, I may be permitted, for the sake of comparison, to give the results of his practice published by Dr. Archer in his Report of the Calcutta Ophthalmic Hospital,

(5.) The fact, that increased mental culture generates increased susceptibility of the nervous system, and consequently increased susceptibility to mental suffering and pain, is perhaps hardly sufficiently recognized. Does it not, however, favor the claim of *medical* to go hand-in-hand with *general* education in India ?

(6.) Von Graefe regards the prognosis of extraction as bad when the operation has been performed in cases where the senile marasmus is out of proportion to the age of the patient—*Ophthalmic Review*, No. 3, p. 245.

along with the recorded success of Dr. Macnamara, of Mozzuferpore, and the latest record of personal experience given by Professor von Graefe of Berlin.

Dr. Archer, in his Report of the Calcutta Ophthalmic Hospital, May 1863, gives the number of patients operated on during the year for extraction as 85, with 14 failures, or about 16½ per cent. of unsuccessful cases. Dr. Macnamara, of Mozzuferpore, gives a proportion of 75 cured, 10 relieved, and 15 failed per cent.(7) Graefe remarks as follows ;(8) "I calculate that out of every 100 extractions, 65 yield a complete result ; of the remaining 35, fifteen yield perfect results from after-operations, either that for secondary cataract or combined with iridectomy. Of the remaining 20, about one-third regain, at any rate, sufficient vision to find their way about by themselves ; a second third regain less amount of sight ; whilst 6 to 8 per cent. of all the eyes operated on either remain or become completely blind, *i. e.*, incapable of recognizing anything, whether they possess quantitative perception of light or not. This is the final result of all cases of simple cataract requiring an operation." Graefe, in this extract, is speaking, chiefly, if not entirely of pauper-patients, hence the results are deduced from a class of cases, the exact counterpart of that from which all the patients recorded in the list are derived.

Out of 50 cases of cataract above recorded, for the cure of which the operation of extraction was performed, 34 terminated successfully and 16 failed, giving a percentage of 68 successful cases and of 32 failures. Of the patients, 32 were males and 18 females. Of the 16 failures, six have prospect of useful vision from after-operations, one case was lost through the carelessness of the patient, and in nine instances the operation entirely failed from causes dependent upon the state of health of the parties operated on.

Of immediately successful cases

Dr. Archer	gives a	percentage	of	85
Dr. Macnamara..........................	do.	do.	„	75
Professor von. Graefe of Berlin.......	do.	do.	„	65
Rossander, of Stockholm...............	do.	do.	„	54
Present list..............................	do.	do.	„	68

(7.) Vide article "On the operation of extraction in Cataract."—*Indian Annals of Medical Science*, No. 14, page 489.

(8.) Vide Graefe's Clinical Lecture on Cataract.—*Ophthalmic Review*, No. 3, page 247, October 1864.

I am quite satisfied that my percentage of success would have approximated closer to that of Dr. Macnamara, had I refrained,—as I am free to confess I ought to have done,—from operating upon cases Nos. 6, 7, 19, 29, 35 and 46, and had case No. 48 taken even moderate care of the injured organ. From these data we may safely conclude, that in suitable cases, the operation of cataract will prove successful in natives of India in about 75 per cent., that is, in three-fourths of those operated on.

Selection of cases.

The operation of extraction performed upon patients such as I have described necessitates a somewhat careful selection of cases; a selection, which experience alone can reduce to certainty. The question, then, is a fair one—Upon what grounds, and to what extent has the selection been made in the cases of the 50 patients whose names appear in the above list? In reply, I may remark that the cases were selected with care but not with exclusive strictness. Had the object been to show a minimum of failures, it would have been necessary to have avoided operating upon every case which did not hold out a very decided hope of success; such principle of selection might have established a claim to high operative skill, but it would have done so at the expense of suffering humanity. I hold it to be the solemn duty of the medical man, in such circumstances as those under consideration, to disregard entirely his own professional reputation and credit, and to operate whenever and wherever circumstances do not peremptorily contra-indicate the operation. Acting upon this principle, the conscientious Surgeon must always shew a considerable percentage of failures. On this point, Graefe makes the remark, " Practitioners who submit unfavorable cases to some other operation, or altogether abstain from operating on them, may present far more favorable statistics than those who operate on nearly all old people by extraction, provided, *secundum artem,* the operation is not contra-indicated."(9)

Of the 34 successful cases, it is reported that the health of 17 was " good."

Health.	Do.	do.	do.	8	was " fair."
	Do.	do.	do.	9	was " bad."

(9.) Vide *Ophthalmic Review,* No. 3, page 247.

Of the 16 unsuccessful cases it is stated that, the health of 2 was "good."

Do.	do.	do.	4	was	"fair."
Do.	do.	do.	10	was	"bad."(10)

A condition of sound health is, as a general rule, easily recognized in the case of the native. I have classed simple anemic cases as "fair," and spanæmic cases as "bad."

Age of patients.

It is difficult to ascertain with accuracy the ages of the poorest classes of natives. In all points connected with dates, sequence of events, &c., their testimony must be accepted with great caution, not because they wish to deceive, but because they take no note of the lapse of time and have no horoscope to indicate the exact year of their birth. The following table of age is founded upon the patients' statements, corrected by personal observation :—

3 cases of operation occurred in persons of 70 years of age and upwards.

21	do	do.	do.	do.	60	do.
19	do.	do.	do.	do.	50	do.
7	do.	do.	do.	do.	40	do.

Of the 3	cases, there were	successful	2;(11)	unsuccessful,	1
Do. 21	do.	do.	13,	Do.	8
Do. 19	do.	do.	14,	Do	5
Do. 7	do.	do.	5,	Do.	2
—			—		—
50			34		16

In the column indicating the nature of the cataracts operated on, the term "mixed" cataract occurs, as well as the terms "nuclear" and "cortical."

Mr. Dixon divides cataracts into "nuclear" and "cortical," and his definition of the former is as follows :—"The nuclear form is that met with in old persons, either alone or (much more frequently) in combination with cortical opacity."(12) In the division adopted in the list, I have limited

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(10.) The general health may be bad and yet operations on the eye terminate favorably.

(11.) Graefe remarks (*Ophthalmic Review*, No. 3, page 245.) "Some Surgeons do not admit the deleterious influence of advanced age on extractions. My statistics prove it most convincingly, a considerable diminution of good results occurring in patients after 65, and more especially after 70 years of age."

(12.) Vide "Diseases of the Eye," 2nd edition, page 214.

the term "nuclear" to cataracts with transparent peripheries, and have called nuclear cataracts with cortical opacity "mixed" cataracts. Cataracts of a mixed consistence are more commonly observed in Indian practice than cataracts of a pure nuclear, or pure cortical type. Of the 50 cases recorded in the list, there were mixed cataracts 34, nuclear 11, and cortical 5.(13) That pure cortical cataracts should have been removed by extraction, may appear somewhat unusual, but the reason of the treatment will be considered by and by.

The question, in which lens does the cataractous change more frequently commence, receives no definite answer in the history of the cases before us.

In 25 cases, the more advanced cataract was observed in the right, and in 20 cases in the left eye, while in 5 instances both lenses appear to have become opaque simultaneously.

Operation.

Operation.—Among the conditions indicated by Mr. W. Jones, (vide "The Principles and Practice of Ophthalmic Medicine and Surgery," 2nd edition, page 243,) as "necessary for, or at least favourable to, the successful performance of the operation" of extraction, are the following:—1. "Steadiness on the part of the patient during and after the operation." The native, as already remarked, exhibits exemplary steadiness during, but often vexatious unsteadiness after the operation. 2. "Large palpebral fissure, so that the eyelids may be sufficiently separated to permit the due exposure of the whole front of the eye-ball." As a general rule, this condition is not secured in the case of the poorer natives of this Presidency. Out of 194 cases of adult and aged natives, the length of whose palpebral fissure I caused to be measured, the following results were obtained:—

Length in	3	instances of	the palpebral fissure		1	inch.
Do.	65	do.	do.	do.	$1\frac{1}{10}$	,,
Do.	121	do.	do.	do. $1\frac{2}{10}$ to	$1\frac{3}{10}$	,,
Do.	4	do.	do.	do.	$1\frac{4}{10}$	,,
Do.	1	do.	do.	do.	$1\frac{5}{10}$	,,

the average length being about $1\frac{2}{10}$ inches. This ana-

(13.) Mr. Martin, the late Superintendent of the Calcutta Eye Infirmary, states (Moorfield's Ophth. Hosp. Reports, Vol. 1, page 263) that 63 per cent. consist of cataracts of a mixed kind, and 23 per cent. of cataracts of a soft or fluid consistence.

tomical peculiarity adds somewhat to the difficulties of extraction. 3. "The eye-ball neither much sunk nor very prominent; in the one case, the section of the cornea cannot be well made; in the other, the healing of the wound does not proceed so favorably." I have hitherto experienced no difficulty from prominence of the eye-ball,(14) but considerable difficulty from the small, sunken, deep-set eye of the native. The table, entered in the margin and drawn up for me by Mr. Wilkins, the intelligent Demonstrator of Anatomy at the Medical College, shows that the transverse and vertical diameters of the base of the native orbit are somewhat less than corresponding measurements in European skulls in the College Museum.

Measurements at base of orbits.

European.			Native.		
Transverse.		*Vertical.*	*Transverse.*		*Vertical.*
Inches	1—5½	1—3 Fem.	Inches	1—4	1—2
„	1—7	1—2 do.	„	1—5½	1—4½
„	1—7	1—5 Male.	„	1—5	1—3
„	1—5	1—5 do.	„	1—5½	1—3
„	1—6	1—5 do.	„	1—6	1—4
„	1—8	1—7 do.	„	1—7	1—3
			„	1—3	1—2
			„	1—5	1—3½
			„	1—4	1—2
			„	1—4	1—5
			„	1—3	1—½
			„	1—6	1—4½
			„	1—4½	1—1
			„	1—4½	1—3
			„	1—4½	1—2½
			„	1—5	1—4
			„	1—5	1—2½
			„	1—4½	1—3
			„	1—5	1—3
			„	1—4½	1—2½
			„	1—4	1—3
			„	1—3½	1—3½
			„	1—5	1—2½
			„	1—3½	1—2
Average. Inches 1—6⅝		Average. Inches 1—4½	Average. Inches 1—4 61/96		Average. Inches 1—2 85/96

Average transverse diameter of orbit, base—

		Native	1	inch 4 61/96	lines.
Do.	do.	European	1	„ 6⅝	„
Vertical diameter—	do.	Native	1	„ 2 85/96	„
Do.	do.	European	1	„ 4½	„

In addition to this anatomical peculiarity, the globe of the native eye is deep-set, the supra-orbital muscles are powerful and prominent, the palpebral fissure is small, and the cavity of the orbit is often very deficient in fat and cellular tissue. 4. "The cornea, healthy in structure (an arcus senilis, p. 21, is no impediment), and of due size and prominence." 5½'''

(14.) A Parsee priest from Bombay was admitted to hospital in order to have extraction performed; he left, however, before the state of his health permitted of the performance of his operation. In his case, the palpebral fissure was very large, and the eye so prominent, that I doubt whether the operation would have been justifiable.

may be regarded as a full sized cornea; in cases of senile marasmus the diameter at times diminishes to 4¾''', and may be combined with tremulous movements of the globes from atrophic degeneration of the muscles. Arcus senilis is very common among natives, and, among the poorer classes begins to appear very early in life. I have seen it as early as the 25th year. At 40 years of age the arcus is generally well marked. In almost all the 50 cases, the fatty degeneration was present either as arcus senilis or as the annulus adiposus. With Mr. W. Jones, I do not regard the arcus senilis as any impediment to the performance of the operation, but I cannot help thinking that the cicatrix in a well marked case of arcus, is more prone to become fatty, is less firm in its cohesive power, and more likely to be the seat of secondary ulcerations than corresponding cicatrices in healthy corneal tissue. 5. "The iris, free from synechia and not inclined towards the cornea, so that the anterior chamber may be of good width." As already remarked, the corneal diameter of the native is often somewhat reduced, and with this reduction comes diminished size of the anterior chamber. 6. "The pupil natural, freely contracting and dilating according to the degree of light." In the aged native, the structure of the iris undergoes a change, in consequence of which the pupil dilates but little, and only feebly responds to the action of atropine. I have not, however, abandoned such cases, but have either enlarged the pupil with the iris scissors, or, performed iridectomy, after dividing the cornea and before starting the lens.

Many of the conditions regarded as unfavorable to the operation of extraction, are present in the native, but most of these can be overcome by mechanical means, care, manual dexterity, or by modifications of the operation itself. As to the rest, diseases of the cornea, iris, vitreous humour, and deeper tissues of the eye forbid the operation, but I doubt if contracted pupil, moderate posterior synechia, slight synchisis of the vitreous humour, chronic cough, or difficulty of breathing, should prevent our giving the patient the chances of restoration of vision by extraction.

Having prepared the patient for the operation by good diet and stimulants, continued, according to the requirements of the case, for a period varying from one to three weeks,

and having during that time avoided, as far as possible, medicine of every kind, I direct the instillation of atropine (gr. 3 ad. ℥i), and endeavour to secure the moderate dilatation of the pupil.(15) An over-dilated pupil favours prolapse of the iris, and, if the vitreous be diffluent, escape of that humour ; a contracted pupil is apt to be bruised during the transit of the lens.

Weather.

The state of the weather is a practical point to be attended to ; the hot season is, perhaps, the most favorable for the operation, the cold season ranks next, and the wet season last. At any season, sudden changes are prejudicial to the eye which has been operated on. My Apothecary, Mr. Turnbull, has also observed that the acmé alike of the cold and hot seasons is against the well-doing of the corneal section, and of operations on the eye generally. Dr. Archer, of Calcutta observes that the greatest number of failures in his practice occurred in the months of November, December, and January. The list entered in the margin gives the months in which the operation was performed, with the proportion of successful and unsuccessful cases.

Month.	No. of cases.	Successful.	Failed.
January	4	1	3
February	6	5	1
March	2	2	0
April	6	4	2
May	2	2	0
June	0	0	0
July	1	1	0
August	1	1	0
September	9	6	3
October	8	4	4
November	8	5	3
December	3	3	0
	50	34	16

In the four hot months of February, March, April and May, 13 out of 16 cases did well ; in the four cold months of October, November, December, and January, 13 out of 23 cases proved successful ; and in the four rainy months of June, July, August, and September, 8 out of 11 terminated favorably.(16)

In England, operations for cataract are generally performed between March and October, though they may be undertaken at any season, provided, as Mr. Wharton Jones remarks, the weather be mild and steady.

(15.) The free application of this solution, especially if often repeated, is apt to induce catarrhal ophthalmia.

(16.) The smallness of the number operated on makes the success appear in a favorable light.

The moderately hot weather agrees best with the native constitution; during the cold season, especially if the nights are very cold, his vital powers become depressed, and reparative action comes to a stand-still. During the rains, the native constitution is in a critical condition; sudden changes of temperature affect it injuriously in consequence of want of food, clothing and home comforts. I have often seen a sudden change of weather affect seriously almost every operation case in hospital.

As stated in a previous contribution,(17) I invariably operate with the patient recumbent, and adopt the plan of fixing the eye-ball re-introduced by Mr. France. Without this expedient, it would be almost impracticable to operate on many of the cases which present themselves for treatment. It is quite true that the idea entertained by many of our older Indian Surgeons of the inability of the cornea to recover from the operation of extraction, and of the little chance there was supposed to be of the union of the section deterred many of them from attempting this valuable operation; but another reason, equally strong, I have no doubt, existed in the mechanical difficulties to the performance of the operation arising from the contracted dimensions of the orbit, from the small size of the palpebral fissure, and from the deep-set position of the eye-ball itself.

As to the former objections, they were, to say the least, very considerably overrated, and France's suggestion enables us now to grapple with the latter difficulties with considerable prospect of success.

Beer's knife, Sichel's pattern, is perhaps the best shape of blade to use, but it must be of small size. Weiss has made for me blades of three sizes:—

Shape of extraction knife.

1	cutting edge	12	lines long,	breadth of base	$3\frac{1}{2}'''$
2	do.	10	do.	do.	$2\frac{3}{4}'''$
3	do.	8	do.	do.	$2'''$

I have also had made by him a knife, as recommended by Dr. Macnamara, of Moozufferpore, in which the blade at its junction with the handle is bent at right angles like a bricklayer's trowel, an arrangement which is supposed to give

(17.) Vide *Madras Quarterly Journal*, No. 15, Article II.

ome advantages to the operator in cases where the eyes are ·ery deep-set. In all ordinary cases Beer's knives, of the izes indicated above, will be found sufficient.

The patient being laid recumbent, his head upon a firm pil-ow, his shoulders supported, with forehead and chin upon he same level, the operation is thus performed. Suppose the ase be one in which the right lens is cataractous, and the peration selected be that by the upper section, then the Assistant, depressing the lower lid, directs the patient to look ıpwards, and seizes the conjunctiva in the middle line f the eye close to the base of the cornea, with a pair f broad pointed dissecting forceps.(18) The grasp of the onjunctiva should be a broad and deep one, and the ornea being brought to a central position, is gently but teadily retained. As soon as the slight spasm passes off, he operator, who stands behind the patient's head, raises the ıpper lid, steadies the globe with the tips of the fore and niddle fingers of the left hand, and, after touching the cornea nce or twice with the flat surface of the blade to ascer-ain if the eye be steady, he proceeds to the operation. The ifficulties of section of the cornea soon disappear when expe-ience has given confidence to the eye and hand. At first, he operator's attention is much distracted; he has to note he exact point of puncturation, the parallelism or otherwise f the blade and iris, the behaviour of the iris itself, and he proper point of counter-puncturation, and these several oints confuse and distract, and lead, it may be, to fai-ure and disappointment. After a time, however, he finds hat by fixing his attention only upon the points of punctura-ion and of counter-puncturation, he may safely allow the emaining difficulties to take care of themselves, provided he as laid his blade parallel with the iris at the moment of ransfixing the cornea. The "tour de main" described in ome works as necessary to prevent the blade from splitting p the laminæ of the cornea, is quite unnecessary, and, if ttempted, is apt to make the hand unsteady, to give the lade a wrong direction, and to lead to the total loss of the queous humour before counter-puncturation can be effected. et the points of puncturation and of counter-puncturation e exactly in the equator of the cornea, and a little in front

(18.) Mr. Hart, Vide *Lancet*, Oct. 18, 1862, uses broad pointed forceps ithout teeth.

of its base ;(19) pass the blade steadily onwards, and if the point of counter-puncturation be either too far forward or too much backward, the direction may be corrected with a little dexterity. If the corneal section be too close to the base of the cornea, the knife is apt to pick up a fold of conjunctiva, and, in dividing it, to lose its fine edge; besides, in such a section, there is more chance of prolapse of the iris. The blade is pushed steadily on until, in the majority of native eyes, the point almost impinges upon the caruncle; the blade is then gently withdrawn, dividing the remaining portion of the cornea up to the last tag; all pressure is now removed, the forceps withdrawn, and the few remaining fibres divided. The eyelids close, and the spasm is permitted to pass away before the rest of the operation is proceeded with. Should the corneal flap fold down, seize with the forceps the cilia of the upper lid, lift the lid from the cornea, direct the patient to look down, and when the flap re-gains its place, drop down the lid gently upon the ball. In very deep set eyes, or where there is great instinctive muscular spasm, it may be necessary to use the wire speculum and dispense with the Assistant's help. This, however, should only be done in cases of great mechanical difficulty, as the pressure of the wire speculum on the globe, and the difficulty of removing it after the section is made, without injurious pressure on the flap, are disadvantages in the way of its employment. In powerful muscular spasm, chloroform should be used; in ordinary cases of extraction, anæsthesia is unnecessary, the pain of the operation to the native being quite inconsiderable.(20)

Suppose the left lens be cataractous, and the operation selected be that by the lower section, then—if the Surgeon be not ambidexter—extraction may be performed thus: the operator, standing by the left side of his recumbent patient, brings him close to the edge of the operating table, and, inclining the patient's head towards the right shoulder,

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(19.) Rossander, in his article on Cataract operations, (Med. Arch. of Stockholm; Klin-Monatsbl. fur. Augenh, 1864, p. 113, quoted in *Ophthalmic Review*, No. 4, page 352) advocates, along with Iridectomy, a flap with a base four lines in diameter.

(20.) I may mention that my Apothecary, Mr. Turnbull, who has had many years' experience at the Eye Infirmary, states that he has far less trouble with cases of extraction than with cases of reclination or solution; vomiting and severe pain very often follow the latter, whereas, as regards extraction, vomiting is unknown, and, in the great majority of cases, no pain whatever is complained of.

rests his forearm on the patient's chest, and seizes with a dissecting forceps the conjunctiva at the point indicated before, depressing at the same time the lid with the ring finger of the same hand, so that no pressure may fall upon the forceps; the Assistant then raises the upper lid with an elevator, and keeps it raised without pressing on the globe. With his forefinger the Assistant stretches gently the skin near the outer canthus, and the Surgeon proceeds with the operation as in the former case, the section being downwards. Great care should be taken in dividing the last tag of the cornea, that no pressure upon the eye-ball is present, and that muscular spasm has come to an end; otherwise the lens, if atrophied, along with its capsule and some vitreous may be forcibly ejected from the eye, especially if the latter humour be somewhat diffluent.

It is not necessary to enter into special details of this operation found in every work on Ophthalmic Surgery, but it may be expedient to note one or two points which, though apparently of minor importance, will be found to bear directly upon the success of the operation. Only one eye at a time should be operated on; direct the patient during the operation to keep his mouth gently open, and do not apply any bandage to the other eye; allow all spasm to cease before you divide the last fibres of the cornea; do not be in a hurry to use the cystitome; avoid bruising the iris in starting the lens; see that the flap is properly adjusted and the pupil central and contracted before closing the eyelids, and pass a horse hair or silver wire suture through the skin of the lids of both eyes in the vertical axis of the organ. Thus secured there will be no need of adhesive straps, dossils of cotton, &c.; the only addition required, perhaps, is to smear the closed lids of the eye operated on with a plasma of opium and glycerine to exclude the rays of light, which otherwise would pass through the lids; a shade should then be placed over both eyes and the patient laid in a partially darkened room.(21) Strict injunc-

(21.) Dr. Macnamara first adopted the suture; he advises its being passed through the skin of the lids before the operation on persons of nervous temperament. Dr. Archer, of Calcutta, uses the silver thread. If the native be trustworthy and sensible, straps as used in England are quite sufficient. Graefe and other Continental oculists apply a "compress bandage." Weiss is now making for me a delicate tubular needle for the transit of the horse hair, which I use as a substitute for the silver wire. Since writing the matter in the text, I have attempted to substitute compresses for the hair suture, and hitherto with success; my experience may be recorded on some future occasion.

tions must be given to the patient as regards rest, quiet, position, diet, manual interference with the eye, shade, &c. If all goes on well the stitch need not be removed for 7 or 8 days, when it is to be snipped and the eyelids bathed gently with warm water. The eye now simply requires to be kept clean, to be protected from light by a shade, and to have the uninterrupted action of fresh air upon it, so that all remaining congestion may be dispelled. With moderate care, the eye becomes soon fit for use, though some time should be allowed to elapse before the patient is fitted with convex glasses. It may seem to be a harsh and barbarous proceeding to stitch the eyelids of patients together, but I am satisfied that, in consequence of the miserable want of common sense on the part of the majority of native patients, it is a precaution of very necessary to success. The insertion of the stitch has other advantages besides that of retaining the lids closed, for it in no way interferes, as straps and compresses do, with the free flow of tears so common soon after the operation, and it obviates those attacks of catarrhal ophthalmia which are by no means infrequent when the eye has been heated with dossils of cotton wool or with other forms of " compress." Light excluded and motion prevented, the eye should be kept cool during the healing of the corneal section. The diet of the patient should be improved after the operation, and the usual stimulants continued; should inflammation of an asthenic type set in, or should ulceration of the edges of the section appear, then, along with good diet and increased doses of arrack, must be given bark and acid, or bark and ammonia. In this way many a threatening case may be tided over its dangers.

Superior and inferior sections.

A good deal has been written lately regarding the comparative merits of upper and lower flaps in extraction. My limited experience inclines me to say that the lower section is more easily performed, and that it possesses some other advantages presently to be noted, but that, as regards ultimate results, it can claim no superiority over the upper section. That some advantage accrues from the protection of the upper lid is very likely, for Graefe remarks that "the average duration of recovery after the upward section is three days less (from twenty-one to twenty-four days in hospital)" than that of cases by the downward section.

Extraction by the superior section was performed				27	times.
Do	do.	inferior	do.	do. 23	„
				50	

Of 27 superior sections, there succeeded.............	18
„ 23 inferior do. do.	16

Messrs. Hart, Cooper, Mooren, Jacobson and others on the Continent, advocate the lower section. It has the following advantages :—

1. The front of the globe is more superficial in consequence of the slight prominence of the infra compared with the supra-orbital ridge.

2. The fixation of the globe can be secured with one hand, whilst the corneal section is performed with the other.

3. On completing the lower section, the flap is not everted and bruised when the cornea rolls up beneath the upper lid, as often happens in superior sections.

4. The cystitome is more readily used, and with less danger to iris and cornea.

5. The lens is more readily started and lifted out from between the lips of the incision.

6. Fragments of a soft lens and shreds of capsule are more easily extracted.

7. Prolapse of the iris is more easily replaced.

8. Iridectomy or incision to enlarge a contracted pupil is more readily performed.

9. The after-treatment of diseases and complications is more easily conducted.

On the other hand, though prolapse of the iris may not be more frequent by the lower than by the upper section, yet when it does occur to any extent, the lower lid acts more injuriously upon the protrusion than the upper under corresponding circumstances would have done; the upper lid affords also better protection than the lower to the section, for the eye more quickly recovers and sooner tolerates the light, and appears to be less likely to suffer from catarrhal ophthalmia than when the lower section has been performed. A broad cicatrix in the upper section, would also, I think, interfere less with vision and with the appearance of the eye, than a corresponding mark below the equator of the cornea. Upon the whole, however, I am disposed to regard the inferior section as the preferable operation of the two.

Schuft's, Mooren's, Jacobson's, and Bader's operations.

I have as yet had no success with Schuft's operation,(22) consequently I have not attempted Mooren's, which consists in iridectomizing first and proceeding to extract when the eye has recovered from the operation. Both operations (Schuft's and Mooren's) entail too much injury on the native eye, and the latter operation has the additional disadvantage of consisting of two severe operations, performed after a considerable interval, of itself a most serious objection in the estimation of the native, who prefers that what is to be done should be done at once. Jacobson's operation appears to me to have no special advantages, although he states that he has only lost 2 in 100 cases.(23) Mooren and Jacobson both operate by the inferior flap. Jacobson holds the eye steady with a forceps and divides the cornea all but a central isthmus; then he lacerates the capsule, divides the isthmus with a secondary knife, clips the conjunctiva, which, by his method must have been partly divided, removes the lens and iridectomizes downwards. He uses chloroform freely.

I think it is expedient, if possible, to save the iris; I cannot see why the healthy iris should be injured, if the injury can be prevented. Were a large prolapse to take place, were the pupil to be found undilatable and rigid, or were the flap of the cornea too small, then iridectomy would be the necessary resource of the Surgeon, but so many cases of simple extraction get well without iridectomy, in which the form and movements of the iris and pupil remain perfectly normal, that I feel little disposed to adopt an operation which inflicts so serious an injury upon the eye, without corresponding advantage to the treatment. Even von Graefe, the proposer and champion of iridectomy as an operation, only has recourse to it in cases of extraction when "the operation itself has not gone on smoothly," *e. g.*, "if

(22.) Mooren with Schuft's operation lost 10 eyes in 32. Rossander speaks very unfavorably of Schuft's operation.

(23.) A sketch of Mooren and Jacobson's operations is given by Mr. Carter in the *Medical Times and Gazette*, October 24, 1863, page 432. A paper on Schuft's operation is also to be found in the same *Gazette* for October 3rd, page 357. In Mr. Carter's article it is stated that, from the statistics of the common flap operation, out of an aggregate of 8,000 cases which fell under the care of the most skilful hands, 1 in 12 eyes was lost. Dr. Mooren lost 2 cases in 60 by his operation, and Jacobson had 2 failures in 100 cases; Rossander, who adopts Mooren's method, lost 46 per cent.

of too small a flap, or comparatively too small an opening of the capsule, or the outside of the lens adhering firmly to the capsule, the lens did not easily glide out, but had to be forced out with difficulty. Again, I attach importance to iridectomy, when on account of imperfect apposition of the flap after the operation, the pupil has a tendency to get dragged, and thus to occasion prolapse of the iris. I also perform iridectomy where, a hard cataract of the whole lens-substance occurs simultaneously with a small imperfectly dilatable pupil; where, on account of an unripe cataract, cortical portions of it may have to be either pressed out with difficulty, or even be left behind; or where the former occurrence necessarily takes place on account of the toughness and cohesion of the cortical portions of the cataract. In any case, indeed, which especially runs the risk of an imperfect healing of the wound, iridectomy may be recommended as promising a better result, if circumscribed suppuration should occur."(24)

Dr. Bader(25) proposes to operate by keeping the eyelids open with the spring speculum; a preliminary incision, large enough to admit one blade of a blunt pointed iris or strabismus scissors is made; the cornea is snipped to an extent equal to that generally divided by the knife. The scissors are so used that the eye may be kept steady and frequent introduction of the blade avoided. The eyeball is fixed by forceps. This mode of operating is supposed to have special advantages in cases where there are marked changes in the vitreous humour. I do not know whether Dr. Bader's suggestions have been acted upon by others or not. It is hardly probable that the irregular surface of a section made with scissors should unite as readily as the smooth surface left by the extraction knife.

Complications during the operation.

The list gives an accurate account of the difficulties and complications which occurred during the operations recorded. The iris fell across the edge of the knife once, and a small portion was cut off; no iritis followed and the case did well.(26) In 8 cases a small quantity of vitreous

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(24.) See von Graefe's Clinical lecture on Cataract. *Ophthalmic Review*, No. 8, page 251.

(25.) *Medical Times and Gazette*, October 24, 1863, page 434.

(26.) The iris seems to resent a prick with a needle more than a cut with a knife or the snip of a scissors. It resents a bruise of its pupilary margin most of all.

humour escaped; of these five did well; those which failed, did so from causes other than loss of the humour. In cases of moderate loss of the vitreous, there appears to be little tendency to inflammatory action. The pupil ultimately becomes slightly displaced and deformed. In 5 cases, the eye suffered considerably from spasm. It would have been better had I used chloroform in most or in all of these. The iris was bruised twice, in consequence of the passage of the lens through a contracted pupil; both cases failed. Iritis, caused by a bruise of the pupil during the escape of the lens, appears peculiarly apt to end disastrously to the structure of the iris and to vision.(27) In one case I had to enlarge the pupil with scissors, but am now inclined, following Graefe's advice, to regard iridectomy in such cases as the more advisable operation. In two cases, pterygium was present, and in both, the hypertrophied membrane disappeared after the operation; this fact is somewhat difficult of explanation; in both cases the pterygium was partly divided.(28) Once the corneal flap folded down, but was easily re-placed. There are great differences in the elasticity, toughness and crispness of the cornea, which are easily detected by the operator when passing the knife through the structure of that organ.

Complications, &c., following the operation.

The several affections and complications which followed the operation form an interesting portion of the experience recorded.

Cornea. In the operation of extraction one-half of the corneal circumference is divided; the edges of the section are somewhat oblique. If the flap fall properly into its place, the cut surfaces come nearly into contact, the inner edges more closely and accurately than the outer, hence the inner lip consisting of the membrane of Decemet unites and retains the aqueous humour within a few hours, and days or weeks before the outer groove is filled up. In 14 cases(29) immediate union of the flap took place. the line of junction being seen as a sharp thin dark line; the cicatrix was quite transparent, and the curve of the cornea normal. Simple

(27.) This tendency of the iris to suffer from pressure is one of the dangers which attend the operation of solution. I have seen eyes lost from no other cause.

(28.) A case of the same kind is recorded in the Calcutta "Medical and Physical Transactions," vol. 4, page 257.

(29.) Nos. 4, 2, 6, 10, 14, 18, 24, 25, 31, 28, 41, 45, 42, 50.

congestion alone was present. In 17 cases[30] the union was more or less retarded by prolapse of the iris, inaction of the edges of the cornea, the occurrence of simple or catarrhal ophthalmia, chronic ophthalmia, or by slight inflammation of the lips of the section causing opacity or minute ulceration. In these cases the cicatrix was slightly opaque, but the opacity gradually diminished, leaving the cornea clear and of its normal convexity. In 2 cases[31] union was still more tardily accomplished and continued rather imperfect, shewing a tendency to secondary ulceration, weakness of the cicatrix, and slight yielding at one or more points. Should catarrhal ophthalmia attack such cases, the edges of the section become inactive, soft, and pappy, with a tendency to asthenic ulceration.[32] In 10 cases[33] inflammation attacked the edges of the section; there was considerable opacity with failure of union at one or two points, tendency to softening, ending in secondary prolapse of the iris, in fistula of the cornea, or in effusion of lymph into the anterior chamber. In the less manageable cases these effusions proceeding from the inner margins of the section stretched like a delicate opaque membrane along the anterior surface of the iris and finally gaining the pupil, more or less completely surrounded and obliterated it. In such cases, the concomitant ophthalmia is of the catarrhal type, and the curve of the cornea becomes more or less altered, bulging out somewhat irregularly in the locality of the section. Sometimes the keratitis is attended with progressive sloughing of the edge of the flap. The dead corneal tissue separates in successive sloughs, and when union ultimately takes place, it does so through the medium of a broad opaque fatty cicatrix, which diminishes in size slowly, and to which the iris becomes more or less attached with partial or entire occlusion of the pupil. In 7 cases[34] unhealthy inflammatory action ran on rapidly to circumscribed or

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(30.) Nos. 1, 3, 5, 9, 11, 17, 21, 26, 32, 33, 34, 36, 37, 43, 44, 46, 49.

(31.) Nos. 23, 31.

(32.) In connection with this subject permit me to refer to a very short but interesting paper by Mr. Raleigh "On the operation for Cataract unattended by the necessary inflammation." Calcutta "Medical and Physical Transactions," vol. 4, page 350, for 1829.

(33.) Nos. 8, 15, 16, 22, 27, 29, 30, 38, 39, 40.

(34.) Nos. 7, 12, 13, 19, 20, 35, 48.

general infiltration of the cornea. This inflammation is apt to spread to other structures of the eye, and to end in general ophthalmitis. The cornea sloughs, the iris protrudes, the pupil is occluded with lymph, and ultimately the globe becomes atrophied. The ophthalmia present is of the purulent type.

Thus, out of 50 cases, 31 corneal sections united either immediately or after a short interval; in 2 cases, the union was slow and unsatisfactory; in 10 instances, there occurred more or less severe keratitis, and, in 7, purulent infiltration of the cornea took place. From these facts are we not justified in assenting to the remark made by Raleigh 36 years ago,(35) when, with reference to the operation of extraction in the native of Bengal, he thus wrote—"The disinclination which the native Indian constitution has to take on an excess of inflammation is proverbial. Yet the extraordinary power it has of repairing injured parts, particularly incised wounds inflicted on healthy structures, is not less so; consequently, the supposition of the native constitution being more incapable of regenerating destroyed structures, or of producing re-union of divided ones, than that of the European, would appear rather inconsistent."(36)

Iris.—In 9 cases, iritis took place, either in its primary or in its propagated form; as *primary* iritis it occurred from bruise of the organ; in the *propagated* form it was seen, either as iritis or as kerato-iritis. "This propagated form" remarks von Graefe, "is developed either after or with suppuration of the wound, sometimes owing to the latter exciting an inflammatory process (cell proliferation) on the inner surface of the cornea, and the purulent products passing into the pupilary space; sometimes from the part of the iris next

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(35.) Vide Calcutta "Medical and Physical Transactions," vol. 4, page 351.

(36.) How is it that a truth so clearly stated in 1829 should have been overlooked, as regards extraction, so long? In 1819, Mr. Richardson, the first Surgeon and Superintendent of the Madras Eye Infirmary, operated by extraction on 28 cases of natives of this Presidency; of these, 20 cases proved successful=71 per cent.; in 1820 he seems to have abandoned extraction and to have betaken himself to reclination and solution. Cases of extraction have occurred since then, but the records of the Eye Infirmary are incomplete, and I can give no account of them; out of 18 cases operated on between the years 1864 and 1862, 12 cases turned out successfully, 5 unsuccessfully, and of 1, the final result is not recorded.

interfere very little with the ultimate success of the tion.

njunctiva.—Simple and catarrhal ophthalmias occur ently after extraction; as a general rule, they are amen- o treatment. The irritation caused by the instillation 'opine, and by the bite of the forceps during the opera- are occasional exciting causes of ophthalmia. If the з kept too long closed or too warm, or too long excluded air and light, ophthalmia is almost certain to be 'd up.

atment.—The principles of treatment after the opera- have been already indicated. After the stitches are luced, the opium plasma applied and the shade tied on, atient is laid upon his back at rest, fluid or semi-fluid s given him, and he is enjoined not to touch the injured .[38] In no instance has vomiting been observed after operation. After the 7th day the eye requires the lus of air and gentle exposure to modified light, in that all tendency to congestion may be got rid of. d pain in the eye, with the sensation as if a grain of or a hair had got into it, occur about the third day, is probably prolapse of the iris. The stitch should moved and the eye examined. If prolapse exists, it

may be re-placed gently, and light allowed to fall upon the sound eye ; the attempt to re-place the prolapse is not always successful. The Calabar Bean may be used, and the gentle application of a pointed pencil of lunar caustic will arrest the protrusion. Inaction and tendency to ulceration in the edges of the section are best remedied by the application of a solution of the nitrate of silver (gr. 10 ad. ℥i), and by improving the diet as well as increasing the stimulus. In some asthenic cases, bark and acid, or bark and ammonia are most useful. Strong stimulants are sometimes required to be applied to the section, when union is peculiarly tardy and the edges of the wound are white, soft, pappy, and inactive. Catarrhal ophthalmia is best treated with solutions of lunar caustic of varying strength, and as a common lotion, the lotions of the acetates of alum, zinc or copper will be found most useful. The acetates appear to be preferable to the sulphates.

Limited keratitis generally subsides without treatment ; the severer forms require to be treated with grey powder combined with quinine and morphia till the gums are slightly touched, and with atropine drops or steam and belladonna pigment, chloroform and belladonna being applied to the temple and brows. Should progressive sloughing of the cornea occur, mercurials must be avoided, the diet and stimulants increased, tonics given, and a gently stimulating wash ordered. The daily gentle removal of the loose slough with the forceps materially assists the recovery. Iritis and kerato-iritis must be treated constitutionally with mercurials, such as grey powder combined with quinine and morphia, and locally with atropine, belladonna pigment and the inunction of blue ointment combined with belladonna. The patient's diet need not be altered ; as soon as the crisis is over, the system should be supported freely to make up for the injury to the blood done by the mercurial course. Purulent iritis from a bruise is hardly susceptible of treatment. Purulent keratitis, especially of the circumscribed form, has been treated successfully by von Graefe by means of "firm compress bandages in marastic individuals, in alternation with warm medicated fomentations." By this bandage, firm pressure is kept up upon the flap ; I have had no experience of this mode of treatment.(39) As a general

(29.) *Ophthalmic Review*, No. 4, page 324.

rule, neither ice nor cold applications agree with the native eye so well as warm.

Diameter and Weight of Cataractous Lenses.

Diameter.	Weight.
4	grs. 1·9
4	,, 1·77
3½	,, 2·54
3½	,, 2·77
4	,, 1·54
4	,, 1·3
3½	,, 2·9
3½	,, 3·16
3	,, 2·09
3	,, 1·43
3	,, 2·39
3½	,, 1·25
3½	,, 2·07
3	,, 1·37
3½	,, 3·47
4	,, 2·22
3½	,, 1·8
4	,, 2·75
4	,, 1·4
3½	,, 2·72
4	,, 1·73
4	,, 1·74
4	,, 2·61
4	,, 1·63
4	,, 2·59
3½	,, 3·01
3½	,, 1·91
3½	,, 2·02
3½	,, 1·78
3½	,, 1·56
Average diameter. $3\frac{73}{201}$ lines.	Average weight in grs. 2·012.

Size and Weight of Cataractous Lenses.

Mr. Wilkins, the Demonstrator of Anatomy, along with Mr. Harvey, the Assistant to the Professor of Chemistry kindly undertook the trouble of weighing and measuring for me 30 good specimens of nuclear and mixed cataractous lenses which had been preserved in glycerine for various periods of time. In the margin will be found the results. The heaviest lens weighed 3·47 grains and was 3½‴ in diameter; the lightest lens weighed 1·25 grains and was also 3½‴ in diameter. The lens with the greatest diameter measured 4‴, and that with the least diameter 3‴. The table well shows how great a variety in size and weight is exhibited by the cataracts generally classed as "nuclear."

Extraction *versus* displacement.

As spontaneous solution of a cataractous lens is a result very rarely observed,(40) the probability of its occurrence may be left out of calculation, in considering the operative inter-

(40.) In 1862 I saw at Moorfields Hospital under the care of Mr. Bowman, a case in which spontaneous solution of the lens had far advanced, and in which the sight was progressively improving. Mr. Bowman, if I remember rightly, stated that he had only seen one other such case in his experience. In December 1863, an admirable case of spontaneous solution, with complete restoration of vision, came under my observation in the person of Conductor G. of this city, æt. 46; no vestige of opacity remains in the pupil. In another case I observed the process going on in a patient named D'Silva, in which the soft periphery of a mixed cataract was being

ference required for the cure of cataract. In the Eye Infirmary of this city, nuclear cataracts, as a general rule, have been displaced, and mixed cataracts have been treated by combined solution and reclination. These operations have essentially pushed extraction from the field since 1820. Occasional cases have been operated on by extraction, but these were exceptional ones. In considering this matter, it should be borne in mind that operations ought never to be pitted against each other, as if they were antagonistic ; on the contrary, it is most necessary that the sphere and limits of each operation should be carefully indicated, and no attempt should be made to make one the substitute of the other, in those cases which properly fall within the limits which indicate the superiority and applicability of each.

In Europe, the operation of displacement in nuclear cataracts has, except in rare cases, given way to one or other form of extraction. The objections which bear upon displacement are well given in the following extract from Dr. McKenzie's work, approvingly quoted by Dixon in his valuable work on Diseases of the Eye, 2nd edition, page 334 :—

"The principle on which the operations of displacement are founded, is essentially bad. As well might we expect to lodge an entirely foreign body within the eye, and yet no continued irritation take place, no disorganization follow of the delicate textures with which it remained in contact, and no interruption happen to the function of the organ, as that the lens could be pressed into the vitreous humour, and lie there close to the retina, and the eye continue healthy, and vision be preserved. Reclination or Depression is to be thought of only when some insuperable objections exist to division and extraction. I assign them this low rank in the scale, not because the lens is apt to re-ascend after being displaced(41)—for that I consider as rather a favorable event, from the chance it gives of the cataract dissolving after its re-ascension—but because chronic inflammation within the

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absorbed from the anterior chamber, into which it had passed on the capsule giving way ; the nucleus of an amber color was still seen in situ. Several cases of natives have come to my notice, in which spontaneous solution having taken place, small amber nuclei were set free, some of which remained permanently in the anterior chamber, and others passed to and fro through the pupil.

(41.) No. 21 is a case of extraction to remove a re-ascended lens.

eye, dissolution of the hyaloid membrane, and amaurosis, aré, I believe, the almost invariable results of a cataract of any considerable bulk continuing undissolved in the situation assigned to it by displacement." By the native operation the lens is simply depressed along with its unbroken capsule. In expert hands this operation is far from being an unsuccessful one, in so far as *present* results are concerned. The native eye is more tolerant of rough treatment than the European eye would be in similar circumstances, but the depressed lens is very rarely absorbed, and sooner or later, the majority of cases operated on lose their vision. Cases come before me, almost daily, in which the depressed lens can be seen unchanged, years after the operation, and in which vision is either reduced to a minimum, or, is totally extinct.(42) A *reclined* nuclear cataract with the capsule lacerated remains "in situ" almost totally unaffected by absorption, and equally with the *depressed* lens leads to the total extinction of vision in the majority even of primarily successful cases.

The *primary* results of the last 40 cases of reclination of hard cataracts, performed in the Eye Infirmary by my predecessors, yield a percentage of 82½ successful cases, a percentage which, compared with 68 per cent., which represents the primary success of extraction, shews results in favor of the less scientific operation; but the superiority of extraction is at once apparent, when we reflect that every case cured by extraction leaves hospital with the *minimum* of vision secured by the operation, and that, as time passes, as the eye becomes more tolerant of light, as all congestion ceases, so vision will improve more and more, with the certainty, moreover, that the disease can never return. Whereas the patient whose cataract has been reclined successfully, leaves hospital with an equal amount of vision, it may be, as did the extraction case, but that amount is to him the *maximum*; rarely indeed does vision ever improve, far more commonly does it begin, gradually, to become impaired; and the eye, moreover, is never free from the risk of re-ascension of the lens. Taking *ultimate* results into consideration, Graefe estimates the success of reclinations to extractions as 5 to 8;(43) "the general re-

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(42.) Nos. 5, 26, 27, 42, 49, are cases in which one eye had been lost from failure of the operation of depression. In all these cases extraction succeeded.

(43.) *Ophthalmic Review*, No. 3, Page 248.

sults of reclination as compared with those of extraction are very unfavorable." Reclination, however, has a class of cases to which it is specially suitable, and in which it would be inexpedient to perform extraction. It is not for a moment to be supposed that in all these reclination will be successful, but in all of them, probably, it will have a better chance of success than extraction. Reclination then may be preferred to extraction :—

1. In cases possessing some constitutional peculiarity as :—in decided cachexias, dependent upon disease, bad habits, &c.; in doubtful conditions of the eye, when severe cough or asthma is also present; in cases where extraction performed on the other eye has already failed.

2. In cases possessing some local peculiarity, as :—in deep-set eyes with small anterior chamber, chronic ophthalmia and atrophied conjunctiva; in diseased cornea with opacities, the result of former ulceration; in decided synchysis oculi with choroidal disease; in various external affections as entropium, ectropium, chronic epiphora, too prominent globe, trichasis, &c.

3. In cases possessing accidental peculiarities, as :—in cases of excessive timidity on the part of the patient, or in instances where the patient cannot remain long enough under observation to warrant the operation of extraction being performed.

In the pithy words of Dr. Mackenzie, "reclination or depression is only to be thought of when some insuperable objections exist to division or extraction." In mixed cataracts, the operation adopted hitherto in the Eye Infirmary, has been that by division and displacement combined,(44) not, as far as I can gather, by division and extraction combined. These compound operations have double dangers, dangers arising from solution as well as from reclination or extraction. Of the two operations I should prefer division combined with extraction, and have succeeded in such cases in removing the nucleus by linear incision without injuring the iris. If the periphery be bulky and soft, division with or without extraction answers very well; but should the nucleus be large and hard, extraction becomes

(44.) Out of 100 cases of mixed and soft cataract, operated on by my predecessors by solution and reclination, 57 are reported to have proved successful; reclination was generally performed after the 2nd or 3rd application of the needle.

[redacted]

the more satisfactory mode of getting rid of the cataract. Any expedient is preferable to the pis aller, reclination.(45) In the case of extraction, the safety or otherwise of the eye may generally be determined within a month of the operation; after that period has elapsed vision improves steadily, and all danger from the operation, as well as all fear of recurrence of the original disease are at an end, but in cases of displacement the eye operated on is never safe; sooner or later, in the majority of cases, the lens either rises up, or serious complications destructive to vision arise.

It results from what has been said that the closer we approximate to European principles in the treatment of nuclear and mixed cataracts, the better; provided at the same time we do not overlook the marked peculiarities of constitution of the native of India. The native eye will readily recover from simple extraction, but I think it more than likely, that the severer operations proposed by Schuft, Mooren, and Jacobson, will be found to be beyond the vital reparative power of the lower classes of natives of this Presidency.

There remains but one remark to be made in explanation of cases 4, 7, 23, 24, 28, which are instances of the failure of the operation of division, when applied to cortical cataracts in natives above 40 years of age. Below 40 years of age the needle is peculiarly applicable to the treatment of cortical cataracts, and the younger the patient is, the more successful the treatment; but, in the case of the poorer natives who have passed their fortieth year, the vital powers are so enfeebled that absorption of the lens takes place most imperfectly; repeated applications of the needle detach more and more of the superficies of the lens, but absorption becomes arrested, intercurrent inflammations of the iris ensue, and so many unfortunate contingencies are likely to occur, that, in my opinion, it is better to extract at once, on being

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(45). In the "Archiv für Ophthalmologie" 8th volume, Part I, will be found a paper by Dr. C. Ritter, entitled, "Beiträge zur pathologischen Anatomie des Auges nach Versuchen an Thieren," in which the author, by dissection, discovered the immediate pathological consequences of reclination performed on inferior animals; these were, re-ascension of the lens, rupture of the capsule, rupture of the hyaloid, cloudiness, softening and fatty changes of the vitreous, separation of retina from the choroid, and fatty changes in the retina. I have examined several cases lately in which displacement of the lens had been followed by entire extinction of vision, and have found sufficient explanation of the blindness in the serious pathological changes of the optic nerve, retina and vitreous humour revealed by the ophthalmoscope.

satisfied, from one trial of the needle, that the progress of absorption is unsatisfactory. Out of the five cases mentioned above, four did well.

The materials now submitted to the profession, derived as they are from personal experience, from the experience of others, and from generally admitted principles, seem to favor the following propositions :—

1.—That the mechanical difficulties arising from the anatomical peculiarities of the native orbit and eye, form no insuperable obstacles to the operation of extraction.

2.—That the cornea of the poorer natives of Southern India unites readily after the operation of extraction.

3.—That, in the native, the success of extraction is as great, as it appears to be in corresponding classes in Europe.

4.—That the special constitution of the native must be considered, in deciding upon the kind of operation to be performed, and in the after treatment to be followed.

5.—That, in the case of the poorer natives, cortical cataracts are removable by absorption *with great difficulty* after the fortieth year of life.

6.—That, within certain limits, the principles of the treatment of cataract followed in Europe are applicable to the disease as seen in natives of this Presidency.

ART. II.—*American Notes.* By HENRY KING, A.B., M.B. CH.L., Ex-Scholar, Senior and Junior Moderator, Trinity College, Dublin ; L. M. Rotunda Hospital, Dublin ; Assistant Surgeon, Madras Army.

THE following unconnected Notes, made in New York during the winter of 1863-64, may prove interesting to a profession ever eager " either to tell or to hear some new thing," though actuated by nobler motives than they to whom this description was first applied. No doubt all these details of American practice will not be new to all the readers of the *Madras Quarterly Journal,* and all those which are new may not be valuable : but I hope there will a residium, however small, which will combine novelty with instruction. Any person caring for information upon the Hospitals, Medical Schools, Medical Societies, &c., referred to in these Notes,

will find it in a recent number of the *Dublin Quarterly Journal of Medical Science.*

1. *Forcible Dilatation of the Rectum.*—On the 16th December 1863, Dr. Van Buren, Professor of Anatomy in the University Medical School, read a paper before the New York Academy of Medicine, in which he advocated forcible dilatation of the rectum as an operative remedy for fissure and other painful affections of the gut. He commenced by stating that the best instrument for rectal examination is a modification of Sims' speculum. This instrument (to the use of which much of the wonderful success with which vesico-vaginal and recto-vaginal fistulæ have been, of late years, treated by Drs. Sims and Emmett, is due), is rather a perinæal retacter than a speculum. It is, of course, unnecessary to describe it here. Any person who has ever seen it used, for the examination of either vagina or rectum, can appreciate its immense superiority to the best of its predecessors. With its aid, as Prof. Van Buren stated, (confessing his incredulity, previous to experience), the entire cavity of the rectum, from the anus to the *sigmoid flexure of the colon*, can be distinctly seen, as I myself can testify.

This instrument, however, he proposes to modify with the view of rendering it more specially applicable to rectal examinations. He would substitute a handle for the second blade; which acts as a handle in the ordinary instrument, and being, generally, of different dimensions from the other blade, enables two specula adapted to two classes of cases, to be combined into one. A 'heel' or curve, of small diameter, for the reception of the sphincter, is introduced between blade and handle; and the edges of the blade are rounded inwardly, to enable the instrument to be swept round and thus to bring into view all parts of the mucous surface of the intestine in turn.

I mentioned these suggested—and, indeed, executed,—"improvements" to Dr. T. A. Emmett, Dr. Sims' very able pupil, partner, and successor, as Surgeon to the Woman's Hospital. He was of opinion that the heel for the sphincter would injure seriously the optical properties of the instrument; that the substitution of the handle for the second blade was a retrograde step, being a return to Sims' *first* instrument, upon which the double bladed speculum was a decided improvement; and, in short, that an ordinary Sims' speculum of the smaller size was superior, for rectal purposes, to the

modified instrument proposed by Dr. Van Buren. So far as my own experience goes, I should think the unmodified speculum quite sufficient for the most complete and accurate examination of the rectum.

The passage of hardened fæces produces laceration of the mucous membrane. The result is the formation of an ulcer; generally situated on the posterior aspect of the gut, and oval in shape. This sore, kept from healing by the tonic contraction of the sphincter, becomes unhealthy. Pain, of severe and peculiar character, follows defæcation, in almost every case, after a longer or shorter *interval*. The stretching of the sphincter, in and by the act of defæcation, seems to give temporary relief, and to indicate the mode of cure recommended by the Professor.

These "fissures of the rectum" are treated in three different ways. Firstly, and utterly unsuccessfully, by lotions and ointments. Secondly, by the knife: employed either to divide the sphincter, or the mucous membrane only, the latter method having been accidentally discovered by Boyer, in a case where the restlessness of the patient prevented the performance of the intended operation. Either of these proceedings is effectual; but, involving the use of a knife, is more disagreeable to patients, (who, as a general rule, object strongly to *cutting*), than the third method; and is, in other respects, also inferior to it, in Dr. V—'s opinion.

The third, then, and most effectual procedure for the cure of this painful affection, is forcible dilatation of the rectum; which is thus performed. The two thumbs of the operator are introduced into the rectum, and, while the buttocks are firmly grasped by the fingers, are drawn forcibly apart to the tubera ischii. This violent tension of the sphincter *paralyses* the muscle for a week—a period which, in the majority of cases, allows sufficient time for the healing of the ulcer or ulcers—just as the vesical muscles are paralysed by excessive distension of the bladder. The operation may be repeated, if necessary. Laceration of the mucous membrane, or even of some fibres of the sphincter, may take place during the process without any ill-effect. There is no incontinence of fæces—the internal sphincter being capable of doing double duty, during the temporary retirement from action of its more powerful partner.

Dr. V. had performed this operation in twenty cases, with perfect success, without the occurrence of any accident

whatever, and with the result of affording great relief to the patients: who are, he said, generally more grateful for relief in this department of their economy than in any other.

The severe pain which follows the application of the ligatures to hæmorrhoids is due, chiefly or altogether, to the action of the sphincter upon the excessively sensitive parts. This may be, and, in Dr. Van Buren's cases, always is, obviated by forcible dilatation, as above described.

The merit of originality is not claimed for this procedure. It was recommended by Recamier, praised afterwards by Nélaton and others, but not adopted or practised by any of them. None of the English monographs, (Curling's, Quain's, &c.,) mention it. The late Dr. Bush (an eminent practitioner of New York) invented an instrument for dilating the rectum, which he may have used, or intended to use, in these cases: but nothing is known on this point.

I should mention that the position which the patient should assume during the performance of this operation is the same as that recommended by Dr. Sims for his special operations: namely, on the face and left side, the right arm behind the back, the buttocks raised, so as to throw the weight of the intestines off the rectum.

In conclusion, I must add that Professor Van Buren is one of the most eminent surgeons in New York, enjoying a most extensive practice and the highest reputation; and that his opinion upon any professional question is entitled to the greatest respect.

2. *Creosote in Burns.*—At several successive meetings of the New York Academy of Medicine, Dr. Squibb, a high authority on pharmaceutical preparations, made a series of observations on the recently issued Pharmacopœia of the United States, pointing out the changes which had been introduced.* One of the new preparations is *Aqua Creosoti,* which has been found to be a most valuable application to burns and scalds. Diluted with an equal quantity of water, it is applied on a piece of lint. It removes the pain *in an hour;* and generally prevents suppuration, even when the cutis has been scorched. It may be prepared extempore by shaking half an ounce of creosote in a pint of water. About 10 per

* That most unscientific misnomer *Æther Sulphuricus* has disappeared from the U. S. Pharmacopœia, giving place to *Æther* (or *Ether*) *Fortior.*

cent. will be taken up, the remainder subsiding to the bottom of the vessel. Dilute as above mentioned.

3. The *Fluid Extracts* of the new U. S. Pharmacopœia have been prepared with great care and ingenuity, and of such strength that one minim is equal in effect to one grain of the substance—or rather that it contains an equal quantity of the active principle of the drug: for twenty minims of the Extr. Fl. Ipecacuanhæ, for instance, are said to produce a speedier and otherwise more satisfactory result than twenty grains of the Pulv. Ipecac. In making these fluid extracts, the menstrua have been varied so as to fulfil the two indications—complete extraction of the active principle of the drug, and regulation of the strength. In one respect, certainly, the fluid are superior to the solid extracts. *Heat* is not used in their preparation. This is, probably, the principal reason of the fact that the fluid extracts of conium and ergot far excel in strength, permanence and certainly the solid extracts or the primary substances. In the latter case, the substance loses its power altogether in two years, while the fluid extract retains its virtue for four years *at least*. The menstruum in these two instances is Acetic Acid.

There is one exception to the rule. The fluid extract of Calisaya is, relatively, of half strength only. An Extr. Fl. Calisayæ Aromaticum has been much used in Military practice, and is coming into favor with Civilian physicians. It resembles Huxham's Tincture,—Calisaya bark being substituted for red. From twelve minims to a drachm of either fluid extract, taken in a glass of sherry ten minutes before dinner, is, Dr. S. says, a most valuable tonic.

4. The *Sarsaparilla* of the New York market is, according to the same authority, worthless. It contains nothing but starch. The only valuable root comes from the Rio Negro and some other branches of the Amazon and is, almost entirely, sent to Spain; where a higher price is paid for it than it would fetch in New York. It is *four times* as expensive as the common sarsaparilla of commerce.*

5. *Vegetable medicines* should be, whenever practicable, prepared from the *seed* of the plant. Seed can be obtained only when the latter has reached maturity,—roots, at any

* What is the therapeutical value of "country sarsaparilla?"

period of its growth. Sarsaparilla, taraxacum and other roots are absolutely inert when gathered at improper seasons.

6. The *Saracena Purpurea*, said to have the property of aborting variola, was weighed in the balance of the New York County Medical Society, (which appointed a Committee for the investigation of the subject), and found wanting. The drug, thus disowned in the country of its birth, has been more kindly received in England. At the time that the examination into its claims to supersede vaccination was proceeding in New York, cases of its successful employment were being reported in the *Lancet.*

7. *Acetate of Potash as a diuretic.*—This drug is a favorite diuretic in the practice of Dr. Alonzo Clarke, Professor of Practice of Medicine in the College of Physicians and Surgeons, of whom we shall have to speak again. He exhibits it to the amount of ℥ss. in the day; beginning with ʒ ii doses and disguising its disagreeable taste by the addition of Acetic Acid.

8. *Chloride of Ammonium.*—On the 1st February I heard a paper read before the New York County Medical Society on this drug, to which the author attributed extraordinary potency in the treatment of many and various diseases. He began with "Watson's Face-Ache" for the cure of which this drug is most valuable—but he did not seem to me to mention distinctly that Watson recommends the "muriate of ammonia" in half drachm doses, for the affection he describes. My own experience coincides with theirs.

German physicians, (the author of the paper was German), have long been in the habit of using the chloride of ammonium in many other cases: but I was not prepared to hear so enthusiastic a panegyric on its virtues as this paper amounted to. The author stated that it was powerful to cure other neuralgiæ, intermittent fever, croup, bronchitis, Asiatic cholera, &c. &c. He combines it with chlorate of potass, with which it is *not* incompatible. It "energises" the action of the letter salt, as well as of the nitrate, and of the iodide of potassium. To the above list of diseases to which chloride of ammonium is fatal, I should have added diphtheria—a disease, I may remark, in passing, not unknown in India—especially in those cases where the membrane tends towards the larynx. With regard to cholera, the author stated that several cases had occurred in one family under his care, the first of which, being treated "in the ordinary way," died—

the later, treated with the combination above mentioned, *recovered. Post hoc ergo, &c.* The effects of the medicine are, according to his representation, most wonderful in cases of croup.

The chloride of ammonium, which has a very nauseous taste, may be given to an adult in half drachm doses. Two ounces, once taken at a dose by mistake, produced no worse result than slight colic and some watery stools. Finally, the effects of the drug are promoted by the exhibition of a preliminary dose of calomel.

Although it is improbable that this medicine possesses all the powers attributed to it by the author of the paper, and by our German brethren, I think that it deserves more attention than it has hitherto received, and venture to recommend it to the notice of the profession in this country.

9. *Persulphate of Iron in Aneurysm.** A man wounded the common carotid with a pen-knife, the result being diffused traumatic aneurysm. The position of the wound in the artery not being known, both the common carotid and the internal were tied. No effect was produced upon the aneurysm by the operation, and after death the wound was found to be more than an inch below the bifurcation of the artery. During the progress of the case a solution of persulphate of iron was twice injected into the tumour—25 minims on the first occasion, and 40 on the second. The result was the formation of two firm clots. The plan seems worthy of trial in other cases.

10. *Lead-poisoning* is believed by New York physicians to be incapable of resisting two specific remedies—iodide of potassium and croton oil. The effect of the former upon the paralysis, which is the most prominent feature of the disease, was carefully investigated in the New York Hospital. The conclusion at which the physicians arrived was decisive as to its efficacy—which was explained in the ordinary way, by the formation of the inert iodide of lead. One of the medical staff of the Bellevue Hospital assured me of the invariable success which has attended the iodide of potassium treatment in that immense establishment. The specific effect of croton oil upon the abdominal pains, asserted by Dr. Bartelott, is not so well established.

* I prefer this to the common orthography. It is not an innovation, and it is more correct.

11. "*Remarkable Case of Deception.* A Woman professing to secrete nothing but Charcoal and Stones for a number of years, all the natural functions being arrested, and the Deception Unmasked. By Lewis A. Sayre, M.D., of New York." Such is the title-page of a short pamphlet,* four pages and a half octavo, of which the author gave me a copy. A condensed account of the case will, I think, be amusing; though I can scarcely claim credit for it as instructive. I shall have occasion to mention Dr. Sayre more than once again in the course of these Notes. He is one of the leading practitioners of New York.

This remarkable woman made her *début* in 1861. A Dr. A. G. Purdy brought her case before the Medical Society of the State of New York as one "of remarkable suppression of urine." In his report he states that "she has also undergone a strange transformation of her skin, on her face, left arm and left leg—they turning black like charcoal;" and that her former physician had *seen* her expectorate, while coughing, pieces resembling charcoal. So reported Dr. Purdy—whether deceiving or being deceived, I know not. He says, doubtfully, at the end of his article, "I cannot say that there is no deception in this case, but think the above statement substantially correct."

After a year's rehearsal in the country, Miss Perry and "her physician," one Dr. Perkins, felt themselves equal to an appearance on a wider stage; and in June 1862, "the charcoal woman" was an article of public exhibition in New York. This was an unfortunate step, in some respect, for the imposture was very quickly blown up there, by the shrewdness and perseverance of Dr. Sayre. The result of the explosion, however, was not so completely satisfactory as honest people would wish; for after two weeks' detention in hospital, Miss Perry returned to her native country, (Oneida), and to her former ingenious method of earning a livelihood. Having heard that she was under the charge of a "Dr." Fitch, and a committee of ladies who were "carefully narrating all the marvellous phenomena which were being exhibited," Dr. Sayre felt it his duty, in the cause of truth and honesty, to read, print, and circulate the account of his discovery of the gross imposture which was being palmed off upon the public.

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* A re-print from "Transactions of the Medical Society of the State of New York," 1863.

On the 26th June 1862, he was requested by a clergyman of the city to see the Charcoal Woman. Dr. Perkins entertained the visitor with a detailed account of the remarkable phenomena which she had presented during fourteen years. At various times during the last four years he had removed from his patient's vagina a vast number of pieces of charcoal, from one to three inches in length, and from half an inch to an inch in diameter; besides several pebbles of nearly the same size. Of the fact there could be no doubt, for —there were the pebbles and the charcoal in a big box.

But the mucous membrane of the vagina was not the only source of charcoal supply with which Miss Perry had been endowed. Dr. Perkins had "an ordinary prune jar nearly full of smaller specimens of charcoal" about half an inch in length and a quarter in breadth, which his highly carbonized patient had expectorated, "either by coughing or vomiting." These secretions were smoother than the vaginal products, and covered with a gum-like material. Lest there should be any mistake, all the stones and pieces of charcoal were labelled and numbered—the numbers referring to "a very large book" in which were recorded the history, date of passage, &c., &c., of each specimen, with great accuracy. Each entry was attested by *bonâ fide* signatures of highly respectable men—many of them lawyers, clergymen, judges, merchants—even physicians!

"This book" Dr. Perkins stated, with justifiable pride, "was the most remarkable work ever written. He was very anxious to ascertain whether any medical man could give a proper solution of the case, as up to the present time it had baffled the skill of all who examined it." The lady had been under his personal supervision for the last four years. She had been most carefully watched during the whole period by himself or others, and *had not passed one drop of urine or one particle of fœces.* She had neither bladder nor rectum, but got on very well without either, inasmuch as "all she ate or drank either exuded from her skin, in the form of thick blood, which dried in scales, like coal, on her face and the left side of her body, or was removed from the vagina every few weeks," the process of delivery being a very painful one. Sometimes the carbonaceous scales would fall off, leaving the skin healthy; but they would reform in a few weeks or months.

After this preliminary statement of the remarkable case,

red if cut loose from its attachment to the hair and to and which bound the patient's forehead. An attempt nfirm, by handling, the impression derived from inspec- elicited an attack of hysterical convulsions and low ering complaints, as if of pain. The left arm was simi- encased, from just below the shoulder to the wrist. A urns of bandage, which Dr. Perkins would not allow to be ved, concealed the termination of the casing above and r. The left leg and foot were covered from just above nee with the same material, but the bending of the foot cracked the casing, over the instep; and the natural was visible through the aperture. Into this fissure, Dr. e quietly put his scissors, having diverted the attention e two impostors and the other persons present, and cut little bit of the "secretion." Immediately upon leav- he house he examined his prize, in the presence of the yman and the patient's niece; and found the casing to st of cotton and gum covered with some black substance. were, of course, at once convinced of the deception h had been practised.

er other relatives, however, still believed in her. In of the excised piece of casing, they were convinced that Sayre was mistaken. Fortunately their scepticism and ility combined took the form of "positively insisting" he should see Miss Perry again on the following day, in pany with some of the leading physicians and surgeons

fragments. The leg and arm were unchanged. The woman was writhing in apparent agony; being, as the doctor explained, about to pass a piece of the coal. He added that the assembled visitors were fortunate in having come just in time to witness a confirmation of his previous statements. A number of the gentlemen present examined the vagina and found that there certainly was some hard substance in it. This Dr. Perkins removed—a piece of coal or charcoal like his other specimens. He then, with almost incredible impudence, requested the opinions of the spectators, severally, as to the explanation of the wonderful phenomenon!

When Dr. Sayre's turn to speak came, he expressed himself with great freedom: to the effect that "the whole affair was a gross deception, that the doctor was a swindling rascal, and that he knew it; that it was a case of nymphomania, and that he had taken advantage of the woman's infirmity; and that the cuticle on the face and extremities was of artificial production," in proof of which he exhibited the specimen he had cut out. Being requested to complete the work he had begun, he, with the assistance of the gentlemen present, "barked" the patient, of her artificial integument, which was found to be cotton cloth and gum, overlaid with some black substance, which appeared to be petroleum, and a pot of which was discovered in the doctor's box.

This exposure of the imposture ought, one should suppose, to have been sufficient. All present were perfectly satisfied of its completeness. It will scarcely be believed that some of the relatives and friends of the unhappy woman called on Dr. Sayre next day, to persuade him that he had been mistaken, and to request that he would meet Dr. Mott, for a more thorough investigation of the case! Stipulating that he was to be allowed to examine the patient under chloroform and without interference, he consented: and the second consultation took place. Dr. Perkins expressed intense indignation at the insults which Dr. Sayre had offered on the previous day, and had no doubt that the latter would find that more charcoal had been secreted—in which case he expected that the other, convinced of his error, would apologize!

The patient refusing to inhale chloroform, Dr. Sayre examined the vagina without its aid, and found it lightly packed with pieces of charcoal, which were removed with some difficulty, the parts being exceedingly dry and contracted. Dr. Mott then asked again whether the woman had

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any rectum. Dr. Perkins said no—and Dr. Sayre's finger simultaneously passed into the missing gut. The catheter was then passed into the bladder, (which, it will be remembered, was represented as non-existent), and an ounce of urine withdrawn. This finally convinced the relatives and friends that they had been humbugged. "The doctor" with admirable presence of mind, coolly asked if the secretion of so small a quantity of urine during a period of four years was not in itself a very remarkable phenomenon, rendering the case one of most wonderful interest? The patient's friends could not regard the matter in this light. They were exceedingly angry; and threatening to have Dr. Perkins arrested as an impostor, he suddenly left the room, and the house—carrying with him his box of specimens and his remarkable book.

The patient was removed to Bellevue Hospital and placed under strict surveillance. All communication with her friends or other sources of undue carbonaceous supply was cut off, and a vegetable diet ordered. Next morning, she stated that she had passed no water since admission. The floor was damp, "as though a bowl of water had been spilled" for a considerable distance round her bed; and a neighbouring patient had observed her, early in the night, sliding towards the edge of the bed, and while lying in that position urinating upon the floor. She professed to have no desire to make water; but a catheter was inserted, (very much against her will,) and nearly a quart of urine withdrawn.

At Dr. Sayre's next visit, the bladder was again distended; and the catheter being again produced, she became very much excited, snatched the instrument, and introduced it herself with the most practised dexterity! A dose of castor-oil operated in the usual way, and during the fortnight she remained in the hospital all the natural functions were properly performed. Her appetite and general health were good. Shortly before she was discharged, she asked the house-surgeon "what he would think if this singular disease should return a few weeks after she got home?" As was stated in the beginning of this Note, the "singular disease *did* return: and its recurrence led to the publication of the case by Dr. Sayre.

12. *Atrophy of the Uterus.*—This cannot, I suppose, be a very rare instance of "arrest of development;" for the Physician to the Woman's Hospital, (Dr. Thomas, who is also Professor Adjunct of Midwifery at one of the principal Medical

schools of New York) mentioned three cases which he had seen within a recent period. The first of these came to the hospital one day, when I was there, to consult Dr. T. upon her sterility. She was then nineteen, and had been married *five years* without any symptom of pregnancy. Her husband had been sixteen at the time of his marriage. The girl had menstruated for a year previous, and no cause of sterility was apparent *except* atrophy of the uterus, which examination with the speculum at once made evident.

On another occasion I saw a case in which more serious consequences appeared to be dependent upon the same cause. A girl, aged 16, was brought to the hospital for advice for epileptic fits, from which she had been suffering for three years. The external signs of puberty were pretty fully developed. Menstruation had taken place a few days previously, for the first time. Dr. T. having, a short time before, met with a case in which epileptic convulsions had been due to the advent of menstruation without adequate development of the uterus, suspected a similar cause in the present instance. Examination showed that the uterus was not larger than that of a girl of eight years old. The treatment successfully adopted in the other case was applied in this. The uterus was developed by the introduction of a sponge-tent three times a week. This dilatation and consequent growth of the organ had completely cured the epileptic affection in the former instance. The latter case I saw, again, more than a month after her admission and subjection to the treatment described. Not one fit had occurred; though previously a week had never passed without one. It would be absurd to build any superstructure upon two cases only; but they may convey a useful hint in a doubtful diagnosis.

13. *Vaginismus* affords an illustration of the danger of an induction founded on an insufficient number of instances, to which I alluded in the last Note. Dr. Sims published a paper upon this excessive and painful contraction of the vagina, induced by the slightest touch, and rendering sexual intercourse impossible,—in one case which had come under his observation the patient had been married *forty years* without coition. He had discovered, as he supposed, that this disease was invariably the effect of a morbid condition of the nerves of the hymen; and he had treated it sucessfully, in every instance, by removing the membrane and its attachments all round in a belt. Since the publication of the

paper, however, cases had occurred, both in his own practice and in Dr. Emmett's, in which vaginismus was not due to this cause, but was secondary to uterine disease.

14. *Tracheotomy in croup.* At a meeting of the New York Pathological Society, on the 13th January 1864, Dr. Sayre brought forward a case of croup in which he had successfully performed tracheotomy, death resulting from a singular accident. The tubes having become somewhat obstructed the child's father drew out the inner one, to free it. Violent hæmorrhage was the result, and the patient was dead before a surgeon could reach the house. During the operation, Dr. Sayre had observed an unusually large vein lying across the trachea, immediately above the point where the tube had been inserted. In fact, it lay across the fenestra of the outer tube. The external coat of the vessel ulcerated away, allowing the internal to sink through both fenestræ (coinciding in position), and to project into and partially obstruct the inner tube. The hasty withdrawal of the latter sliced off the projuction and fatal hæmorrhage ensued. The lesson which Dr. Sayre deduced from this accident was to have no fenestra in the inner tube, and to change the position of the outer one. The only object of having a fenestra at all is to allow the convalescent patient to use his voice. For this purpose the inner tube may be withdrawn at any time, and air pass into the larynx through the fenestræ of the outer. It was suggested at this meeting that the use of a tube at all is worse than unnecessary—that it irritates, and even produces bronchitis. There is no ground, I think, for this supposition.

I have mentioned this case, less on account of its intrinsic importance, than as an introduction to an account of Dr. Sayre's practice in those cases of croup which obviously require tracheotomy. He had, at the time I heard him speak on the subject, operated in 8 cases, of which 5, *besides* the one above-mentioned, (which was on the way to recovery when death from another cause intervened), were completely successful. This very high measure of success he attributes to the after treatment. The child is kept in a room, the temperature of which is maintained at from 85° to 90° (F.); and the atmosphere of which is kept *saturated with moisture*, by means of a vessel of water placed on "the stove." The membrane of croup is nearly soluble in hot water, as may be seen from the ease with which the tubes may be cleaned and cleared in hot water, while the same process is

most difficult with cold. Hence it would seem that not only is watery vapour at a high temperature almost essential to the successful treatment of cases of croup after tracheotomy, but that the necessity for the operation may be altogether obviated by keeping the patient in such an atmosphere as I have described. In the United States this is easily done, stoves being used almost universally by the classes most liable to croup, and very generally by others. In England this method of treatment would be less easy, but practicable. In this country it would be more difficult of application.

At a Meeting of the New York County Medical Society held subsequently, at which, however, I was not able to attend, a gentleman (whose name, I think, was Morriss) read a report of two cases of "membranous" croup which had been successfully treated, without operation, in the manner indicated. The reporter claimed the merit of having introduced the practice into the United States; conceding the credit of original discovery to "Dr. Budd of Bristol."

15. *Beef-tea.* At Dr. Thomas's "Clinique" at the College of Physicians and Surgeons, on the 4th December 1863, one of the cases on which the Professor lectured with great ability was a girl of 19, suffering under well-marked chlorosis—evinced by paleness of the mucous surfaces, diablosis, &c. &c. The treatment recommended was gr. iii.; of "perhydrated iron" with gr. ¼ of extract (watery or alcoholic) of nux vomica, three times a day—a combination which Dr. T. considers the best medicine for those cases of chlorosis in which the nervous system is affected as well as the hæmal. He further ordered one pint of "beef-tea" to be drunk at each meal.*

With reference to this last item he remarked that an analysis of some ordinary "strong beef-tea" had given 95 per cent. of water. He related Majendies' experiment, in which one dog was fed on "beef-tea" and another on the shreds of meat from which the broth had been made, from which all nutritious matter was supposed to have been removed by long boiling, and which are generally thrown away. The latter animal grew fat; the former died of starvation. In conclusion he gave the following recipe for the preparation of *real* beef-tea; by a process which imitates that of diges-

* Cod-liver oil is a most valuable nutrient, but apt to disagree in cases of chlorosis.

tion, and gives a most nutritious and easily digested aliment.

Mince one pound of beef, and bray in a stone mortar with twelve minims of strong muriatic acid. Add about a pint and a half of *cold* water; boil slowly for half an hour; then give one rapid boil, and strain through a piece of ordinary cloth. Almost the whole contents of the saucepan ought to pass through the strainer.

16. *Infants' Milk.* From the same lecturer, on another occasion, I heard of the following curious experiment, which he had seen in Paris while studying there. He was discussing the folded position of the fœtus in utero; which he accounted for by the preponderant power of the flexor muscles, the fœtus being under the control of organic nervous centres only; as in cases of paralysis when the control of the will is lost, a similar action of the flexors is observable. He then mentioned that either Boerhaave or Van Swieten accounts for the attitude of the fœtal head—bent downwards over the chest—by supposing that during intra-uterine life the embryo sucks its own breasts: and, to show that this might not be altogether an unprofitable employment, related the Paris experiment, which was new to me.

Ten healthy infants were selected, between the 5th and 9th days after birth, (about the time of separation of the remains of the funis), when the secretion of the mammary glands is most abundant. One of these was *wet-nursed* by the other nine for a week; and not till after a week did it show symptoms of insufficiency of food, when it was restored to its mother. Two of the nine nurses suffered subsequently from mammary abscess.

While I am on this subject, the following facts appear to me not unworthy of being "re-published for information." They are taken from one of the notes to Professor Bedford's valuable work on Obstetrics.

Of 65 infants examined from 9th to 10th day, in one only was the mammary secretion not observed. Increased volume of the glands and secretion usually continue, in a certain degree, until the 20th day. Out of 165 infants, from 12 to 21 days old, 149 exhibited the lacteal secretion in variable quantity. At the end of a month, it is extremely rare for the secretion not to have ceased altogether. In four instances, M. Gubler observed it to continue for two months.

This milk is more alkaline than that of the adult woman and of other animals.

The following analyses made by M. Querenne show the curious fact that the milk of the infant and that of the *ass* are very much alike in composition:—

	Woman's.	Infant's.	Ass.
Butter	2·60	1·40	1·40
Casein	3·90	2·80	1·70
Sugar and extractive matter	4·90	6·40	6·40
Water	88·60	89·40	90·50

17. *To imitate human milk,* in the artificial feeding of infants, ought to be important. In the *American Journal of the Sciences* for July 1858, a paper appeared in which this problem was examined by Dr. Cumming. The following results are given in a note by Professor Bedford:—

	Cow's milk.	Human milk.*
Butter	38·59	20·76
Casein	40·75	14·34
Sugar	53·97	75·02
Water	866·69	889·88

In cow's milk the butter is to the casein as 100 : 105; in human milk as 100: 70. If, then, by dilution of cow's milk, we reduce the amount of butter to 20·76 parts in 1,000, we shall have 50 per cent. more casein in the mixture than there is in human milk. If, by further dilution, we reduce the casein to the proportion of 14·34 in 1,000, we shall have only 13·58 parts of butter, or less than two-thirds of the proper proportion. *Ergo,* diluting simply will not make cow's milk fit for babies.

If we leave ordinary cow's milk at rest for four or five hours, and then remove and examine the upper third, we find in it 50 per cent. more butter than it contained before. In round numbers, its butter is no longer to its casein in the proportion of 100 : 105, but as 150 : 105, or as 100 : 70. If, then, by dilution of this upper third we reduce the butter to 20·76 in 1,000, we have 14·34 of casein, as in human

*It will be noticed that this analysis of the milk of the adult human female differs considerably from that given in Note 16. As each table was the work of one person, and the object in view in both cases was a *comparison* of results of analyses of different substances, made at the same time, the discrepancy between the proportions of the same substance in the two tables is comparatively unimportant.

k. [By adding two parts of water to the upper stratum, reduce the proportion of butter from 58 per 1,000 to 20, the casein from 41 to 14, which are the amounts uired.]

8. *Epigram.* The following lines were introduced into Valedictory Address, which formed part of the proceed-s at the spring commencement of the College of Physi-is and Surgeons, last March. Neither the epigram nor idea it embodies are new; but I had not heard the ner before:—

God and the Doctor all mankind adore—
When danger threatens—not an hour before.
The danger past, both are alike requited;
God is forgotten, and the Doctor slighted!

.9. *Oily Blood.* At a Meeting of the New York Pathologi- Society in December 1863, a specimen of oily blood was iibited. 25 per cent. of the fluid contents of the veins s oil. The man had sustained a comminuted fracture of leg. He refused to allow immediate amputation. When operation was performed afterwards gangrene set in, and died. The superficial veins contained a considerable intity of *gas.* The liver and kidneys were waxy. It s suggested that the case was one of nekrhæmia from hock;" the blood being deficient in alkali to saponify the ty part of its constituents.

20. *Cancerous Heart.* At a Meeting of a private Medical ciety, or "Union," Dr. Finnell—one of the visiting Sur-ons of St. Vincent's Hospital—exhibited a remarkable ecimen of scirrhous heart. The morbid deposit occupied rt of the substance of the left ventricle; the origin and rt of the course of the large arteries were, with the trachea, rrounded by a mass of scirrhus. It was found also in lungs, liver, ovaries and kidneys, abundantly. There is none in the mammæ which were well developed. The tient had been a healthy-looking German girl, three nths from Europe, employed as waitress in a "Lager er Saloon," where she was worked hard and fed badly, tting little food, it was said, except "lager bier" *ad libitum,* is being one of the thinnest potations known. Notwith-inding these unfavorable circumstances, the girl appeared good condition.

ART. III.—*Special Report as to the relative effects of Hill and Plains Stations on the Sanitary welfare of the Soldiers, 74th Highlanders.* By Surgeon-Major JAMES MACBETH, M.D., H. M. 74th Highlanders.

(Communicated by Government.)

1. As this report, should it be accepted, will certainly be thoroughly analysed as to the correctness of its general purport, tables, &c., and statements, it is absolutely necessary for me to offer in preamble a brief explanation to account for my having undertaken the task.

2. The Senior Medical Officer at Bellary in the Ceded Districts, informed me that he was deputed by the Principal Inspector-General of the Madras Presidency to enquire whether or not I could command such records as would enable me to give a Medical history of the Corps. I had no hesitation in replying, "certainly." I was then asked to undertake the work; I hesitated, but only because my Regiment was under orders for Home. On being informed that the Principal Inspector-General was pressed for such a report to be laid before the Secretary of State for India, I at once assented, never, however, doubting that the utmost latitude, to the extent of the time I might remain in India, would have been accorded me for so grave and laborious an undertaking. Shortly afterwards I discovered that I was expected to furnish the report at once; this I was compelled, respectfully, to decline, and appealed through my Commanding Officer to His Excellency the Commander-in-Chief who was graciously pleased to admit the reasonableness of my request for time. Still great pressure has been put on me. Any one who takes the trouble to peruse the report cannot fail to see that its compilation, the construction of the tables, reading up old reports, references, correspondence, and last, and most perplexing of all, discovering the precise circumstances recorded regarding every man who belonged to the Corps from the day it landed in India, up to the date of our embarkation for Home, was a task of no ordinary difficulty; and when, added to this, I was obliged to do my work on the march, moving every day to perform my duties and go on in advance with the sick, and complete annual returns and other documents, I feel that I will greatly disarm severe criticism and insure consideration, which is all I desire. I should at any time have assumed the task with diffidence,

but when so great pressure was made on me as to time, I confess I proceeded to furnish it with no little reluctance, only, however, because I fear that situated as I am, without time for reference, quiet, or any other convenience, I shall not be able to do credit either to the subject or myself. Having said so much, I can only crave indulgence for all my deficiencies and shortcomings.

3. Before entering upon the Indian career of the 74th Highlanders, I must premise by recording that the Head Quarters left England on the 14th March 1851, landed at the Cape on the 11th May 1851, were engaged for three years on active service in Africa during the late Kaffir War in the years 1851, 52, 53, till they embarked for India on the 20th November 1853. While on active service, though the climate is reputed to be wonderfully healthy, and well adapted for English, Irish, and Scotch soldiers, it is certain that they were exposed to a good deal of hardship and vicissitudes of temperature during the twenty-four hours, as well as scarcity of proper clothing, irregularity of diet, and generally a total want of vegetables, often dieted on biscuit and salt provisions alone; this, during the greater portion of their voyage towards India, was of course continued to a certain extent. Shortly after the Head Quarters reached Madras (12th January 1854), they were encamped on the Esplanade, and they marched for Trichinopoly, where three Companies were stationed for twelve months; when five days after, two Companies were sent to Jackatalla in the Neilgherry range; after three months, three Companies more, with Head Quarters, reached that station on the 30th March 1854; in a month after that the remainder, leaving the whole Corps there till the 14th February 1855, when the Left Wing was ordered to Cannanore, and six months subsequently two Companies to join it, leaving at Head Quarters only 393 men.

4. To proceed with this history, the Depôt Companies reached Madras in the month of January 1854, and embarked for Negapatam on the 19th January. Most unfortunately Cholera broke out amongst them, and before and after landing, previous to their arrival at Trichinopoly no less than 30 men, 5 women and 6 children fell victims to this fatal disease. I may here state that this unfortunate Detachment while en route to Jackatalla were again attacked by the disease, two marches from the foot of the Ghat, and lost 9 men, 2 women and 4 children.

5. The two first Companies occupied some temporary huts, previously the accommodation provided for two Companies of H. M.'s 84th Regiment, and temporary bamboo and mud sheds low down on the edge of a scarped hill running up behind them, were hurriedly got up for the accommodation of the men; low, unventilated, crowded, without even fire places, badly fitting doors, and few windows, each with four panes of glass, the water percolating and naturally rising to the surface through the low ground; three wooden boards, miscalled cots, without mattresses and with insufficient covering, was not the result certain? and miserably was it realized. The previous history will have prepared the mind for the fact that there was a highly scorbutic constitutional tendency amongst the men who had served at the Cape, while of the Volunteers who joined, many had spent years in the relaxing climate of the Western Coast with H. M.'s 25th and 94th Regiments, the latter sent up promiscuously, without reference to their state of health, antecedents, or habits of body. A virulent and fatal form of dysentery shortly broke out, and between 25 and 30 were admitted, and caused no less than 11 casualties, the majority of the dysenteric cases having originated in the huts with mud floors, comparatively few came from the old and more commodious ones on the spur of a sloping hill, and many of them having wooden flooring, all the others bricked, showing that even so slight precautions had prevented disease. I earnestly pointed out the defects in ventilation and utter want of drainage. The last erected temporary ranges were built in the face of and scraped out low down on the side of a hill—the floor a mud one, the water of course penetrated through the soil, reached the surface, and was naturally attracted into and absorbed by the soil.

6. In course of this report I hope I shall be able to prove by the extracts from reports and other official documents regarding the sanitary history of the 74th Highlanders since their arrival in the Madras Presidency—that my opinions are unprejudiced, and the result of experience coupled with long and mature consideration. I shall quote freely from documents relating to all phases and periods of the history of the Corps, beginning with their landing and ending with their embarkation. The tables will shew that I have, after much labor and difficulty, succeeded in faithfully accounting for every man, and shewn what has become of each, and the remainder will make up the deficit, and thus,

with those accounted for and remaining, the grand totals will be found totally, few who have not tried the experiment will believe how difficult it was to do so.

A short analysis of the tables with explanatory remarks and references.

7. In this portion of the report I shall endeavour to shew how impossible it is that valuable or reliable local statistics can be deduced from the residence of any portion or portions of the 74th Highlanders under the somewhat peculiar circumstances in which parts of the Corps have at different periods been located. For the first four or five years of our Indian Service, the Regiment was so entirely disintegrated,—*vide* tables and quotations, that no possible opinions can be arrived at ,shewing the relative sanitary effects on the health of the men generally at Jackatalla, useful for local sanitary deductions; at Bellary even, when the Left Wing, all the Detachments, different batches of recruits joined, and the Corps was once more together in its integrity, it will be at once seen from the tables what difficult and incongruous circumstances and influences must be dealt with before any reliable local facts can be arrived at as to the effects the station may have exerted on the sanitary state of the Corps; with the help of extracts from reports, and the tables appended, I shall, I hope, be able to make this plain enough, and finally to shew, that individually and collectively, the effect of the climate and locality of Jackatalla was in every phase, save one, conducive to the sanitary benefit of the corps. The exception I alluded to is, when men belonging to the Regiment arrived at that station in such a state or habit of body as involved the almost certainty that latent disease would be matured and developed, which local influences, such as have been enumerated and existed, would most probably superinduce, thus causing exaggerated forms of zymotic diseases, which they did ! ! ! Hence the mortality uninfluenced either by climate or situation, but clearly owing to the constitutional state of the individuals and the circumstances affecting them for evil—with this I leave Jackatalla for the present.

8. With reference to our stay at Bellary for a period of over six years, a great many important matters must be weighed; when the Regiment met, men of all ages, constitutions, services in different climates for various periods, were

brought together. Let Bellary be the healthiest station in the world, and it is a healthy station, one of two things must happen, either a large number of men must be discharged or invalided, more shortly get rid of, or from the peculiar heat and arid nature of the climate under the circumstances named, an enormous sick list, and not remotely a large mortality be the result. The tables will shew that the alternative of removing the men from such influences was adopted and mortality avoided, but a large proportion of invalids and discharged men are shewn. At Jackatalla no such choice was left; zymotic diseases and a grave mortality was the result, little or no invaliding comparatively, but the returns and tables will demonstrate that at Bellary, after the first clearing out, so to speak, there was a decided diminution both of local sickness and the necessity for invaliding home. This state of matters lasted for a period when extraneous causes, together with the extreme and persistent heat of the climate, with other concomitant influences, resulted in producing a decided effect on the constitutions of a considerable number of men, when discharge and invaliding again became necessary. *Vide* extract from reports and refer to tables.

9. Now a few remarks on the terrible results of Syphilitic diseases, the cause of more discharges, invaliding, and every other evil destructive to the constitution of the men and the interests of the Service, when I have done.

10. I read lately with much interest the remarks of an eminent Medical Officer connected with Netley Abbey at home, in which most ably and justly he sets forth this crying evil, remarking " in situation are the terrible results so conspicuously evident as here, where they are traceable in every fibre and tissue." Without his opportunities I too have observed the miserable results, not only in the individual, but their unfortunate offspring even unto the third generation. This, coupled with the scrofulous material, unfortunately admitted into the Service, causes an alarming proportion of the diseases, invaliding, and death in all climates, and so it will continue till Hygienic influences and legislative wisdom combine to break down a pseudo morality which, admitting the evils of uncontrolled and unlegislated-for prostitution, will not admit the necessity for the real mercy of authorized and governed legislative interference. In Bengal this was, to a certain extent, some ten

years ago recognized. I was witness to the beneficial results morally and physically to both parties concerned, and submit that no religious or moral rule was infringed. Whenever I have had opportunity or influence, I have advocated this, and however limited the attempt when made, I always found it result in good.

11. Having given the gross results of yearly mortality, invaliding, &c., it becomes necessary again to advert to tables, extracts, &c., and request attention to the controlling causes over such results.

12. Then as to mortality, it will be evident on the face of this that it is mainly attributable to two causes, the attack of Dysentery at Jackatalla and the mortality in certain unfortunate marches; those two events alone giving of the total deaths during the ten years under notice 104, the total being from all causes 275.

13. Next in order let us glance at the amount of invaliding, when it will be seen that at Jackatalla it was comparatively trifling, though mortality was greater; the invaliding was very considerable at Bellary, and this is easily accounted for, when it is recollected that all the inauspicious influences were concentrated at one point. The men from the Western Coast anemic and cachectic, the men who had escaped from cholera and other zymotic diseases in the unfortunate marches, and a very indifferent batch of recruits which joined in November 1860, of whom a reference to table R. will shew that they had defects which ought to have prevented their admission into the Service; it is therefore no more just to refer the increased sickness and number of invalids to the climate or locality of Bellary, than it is to attribute the mortality from zymotic diseases to Jackatalla.

14. Having given tabular statements of every form, I thought it might prove useful to assist those who are anxious to arrive at just conclusions as to the relative value of Military stations on the hills and plains on the health, efficiency, longevity, and actual constitutional wear and tear accruing. Before proceeding with references to the comparative results shewn by the various tables to affect the different sanitary questions under consideration, I shall endeavour to give a resumé of recorded facts, copiously quoted from existing official documents, as they occurred at the places and periods set forth, which I submit is the only

reliable mode of arriving at just conclusions, and beg to offer my reasons for feeling strongly on this point.

15. I am well aware of the infinite value of accurate statistical tables, and have carefully studied them, more particularly as they happened to relate to different localities where I was in Medical and Surgical practice at the periods the tables referred to; and it always struck me how much more generally useful and interesting they would have been accompanied by a short history of the state of affairs which produced or effected results duly set forth in figures. Such statements ought to be made out by experienced Medical Sanitary Officers located at the different stations. I confidently affirm that in my own personal experience, tables affecting to shew the relative mortality, amount of zymotic disease, &c., could only lead to erroneous deductions as to the sanitary advantages or otherwise of places tabularly dealt with without explanatory notes. With a view to illustrate my meaning, I shall instance Jackatalla, or Wellington, on the Neilgherries, having perused tables actually making it out an unhealthy station with a great amount of fever and acute zymotic diseases of local origin. Now, I only ask any unprejudiced person who has done me the favor to peruse this report in its various parts, particularly the quotations treating of the health of the 74th Highlanders and other European Troops under my medical care at different periods, whilst stationed at Jackatalla, if facts and tables accord? I submit that it would be precisely as fair to assume that a locality was unhealthy because mortality occurred or subsequent disease ensued from a flood, fire, or an earthquake, as to come to conclusions regarding the local value of Jackatalla from dry statistical results. With reference to the 74th Highlanders, let the extracts from the various reports be read, then mark and follow the results and facts as to the different causes which affected, not the locality, please to observe, but the individuals hurriedly and promiscuously set down there. It will be then evident to the most casual, nay, I think I may add, even a prejudiced observer, that dilatorily and tediously as improvements were effected, so steadily did the state of health improve, the mortality and the amount and severity of disease decrease, till finally there was little or none, save in cases where the causes previously alluded to involved a very gradual return to health, and in others forbade the hope of such a desirable result at all. To obviate the necessity for reference as much as in my

power, I shall recapitulate some of the causes why there was much sickness and mortality amongst the soldiers on first arrival.

1st.—The previous history and constituent parts of the Corps; 2nd, the scrofulous diathesis in the men from Africa; 3rd, the disastrous marches, when that dire scourge, cholera, from which those who did escape recovered with shattered and debilitated constitutional powers, broke out; 4th, the promiscuous manner in which men were permitted to volunteer from the 25th and 94th Regiments, and men who had seen much tropical service, mostly too in that, after a time, very relaxing climate, the Western Coast, without the slightest attention to their state of health, or the functional capabilities of important organs, they were sent up some six thousand feet above the level of the sea, many with torpid livers, others with diseased hearts or lungs, not a few actually suffering from various bowel affections, and none of them clothed with reference to such a climate.

16. Let us now arrive with them at Jackatalla. It has been shewn that they took possession of low, damp, unventilated huts, many of which were erected in the face of a hill near its bottom, no fire places, badly fitting doors and windows, three hard boards without a mattress, a quilt, and one *thin* blanket for bed and bedding; besides, they were very much overcrowded. Without going further, I think I have shewn a good many reasons for the probability of disease irrespective of locality. Thus, I submit, it has been proved that few of the men were in the best or most satisfactory circumstance to induce a hope of much sanitary benefit from the locality and climate, many of them being actually in such a state of body that the nature of the climate must mature and develop latent diseases, and to whom, consequently, it was the reverse of beneficial. Yet all this materially affects the question, as such men, when attacked, had infinitely less chance of recovering than if they were on the plains. If death ensued, where was the blame due? Surely not to the situation, but to the fact of their having unfortunately come to it. Another instance:—A Detachment of the 74th was attacked by cholera at the foot of the hills; three men arrived in a moribund state and died, nevertheless they are included in the tabular statement as adding to the local mortality. Was it so, and is such a statement reliable for people at a distance to form their

opinion from? That table does not add, either that there were eighty premonitory cases, who, if I knew any thing of cholera after twenty years' practice in India, involving me in four terrible epidemic attacks, would all, or nearly all, have been seized, taking the following circumstances into consideration:—There was a panic, the men were new to the country, eight (!!) comrades died rapidly amongst them in camp, the disease was violent, and had only just made its attack. All who know of cholera are aware that the first cases are always the most violent, yet mark the result in this instance; three of the eighty were seized after arrival, but not one died, the remainder recovered and were at duty in a few days, few were even admitted into hospital. In the plains, judging from other instances, would such have been the end? I fear not. This appears to me a true anecdote in favor of the locality which no table of figures can shew. Still treating of climate, I wish, however, to offer one or two further facts in proof that where tabular statements are without accompanying explanations, they almost certainly mislead, however carefully and accurately constructed. I heard that the Collector of the district had reported a violent outbreak of cholera which was carrying off large numbers of natives in the neighbourhood of a beautiful place named "Avalanche." I was doubtful about the correctness of the diagnosis, and willing to assist if in my power, but I fear a good deal influenced by a wish to remove my doubts and confirm my opinion, I posted horses, rode there, and stayed three days; distance out and back about 100 miles. I went amongst the people and relieved some to the best of my limited means. To achieve any real good or efficient amelioration of the most melancholy and distressing spectacle presented to me, the first step to be taken was the total removal of the people, a proceeding which I had neither the power to propose nor the means to carry out. As I surmised, the disease was not cholera, but an exaggerated form of acute diarrhœa, the only resemblance it bore to the former disease being extreme depression, purging, and death. I found the unfortunate natives of the race called Burghers, the present cultivators of the soil, though the more aristocratic looking Todahs are, I believe, the original possessors and lords of the soil, the former located near the foot of a high hill; their miserable hovels were holes in the ground, with two pieces of thatch, thus / \ ,

for a covering; they were actually in a marsh, lying in a puddle, with almost no bodily clothing, covered by a scanty cumbly, insufficient food of inferior quality, no medicine, no advice. Under such circumstances, what other result could there be save disease and death. But my object in relating the anecdote is, that as it was currently reported and generally believed that the fatality which occurred had resulted from cholera, possibly it may have been thus reported to the authorities; this too, then, may form an item in the tabular statement. One more instance—I have been permitted verbally, by an eminent Medical Officer of high rank to say, on his authority, that he placed no reliance whatever on the statistical sanitary tables of Ootacamund as at present conducted. The natives die without being seen by an educated medical man; the general idea of a native is, when sick, if the illness come in any other form than bowel complaint, that he is "tup lurza," or "fever-stricken," and such is the disease under which, as a rule, their deaths are reported and probably entered in tabular statistical returns. When I was at Ootacamund, chest complaints, as pneumonia, bronchitis, inflammatory sore throat, influenza, &c., were frequent.

17. Thus I understand this long established sanitary station has lately got the bad name of being feverish and rather unhealthy. I would add one other fact for consideration. From the continual influx and reflux of Europeans with retinues of native servants, a considerable number of the yearly native population of Ootacamund must be migratory. Is it not, therefore, more than probable, that the actual cases of fevers, and the deaths accruing, have been originated in the plains, or contracted in passing through the highly malarious jungles at the base of the Neilgherries? That attacks of common fever may and do originate on the hills, I do not for a moment wish to deny; but I am strongly of opinion, that amongst residents, who have been any length of time located, fevers of a remittent or intermittent type do not arise in individuals *never previously attacked.* I mention this, as it is not known how long the insidious poison, being once absorbed into the system, may be latent.

18. In constructing tabular statements for such a place as Ootacamund, there are several important points to be considered.

1st.—That the majority of European, and a great portion of the native population, is fluctuating, and most of the temporary residents are more or less in indifferent health.

2nd.—The European residents are principally retired Officers of a certain age, all of whom have seen more or less tropical service, with their families, together with discharged Soldiers on their pensions; yet, taking all such disadvantages into consideration, from what I know of it, I believe the permanent inhabitants, when they have after a time become accustomed to the climate and ascertained the proper mode of living and clothing themselves, soon become robust, active, healthy Europeans in all grades and classes, building for themselves fortunes and houses, and bringing up fine, handsome, healthy boys and girls, such as I have myself seen and admired there. Such is the proper mode of discovering the sanitary advantages of hill climates, and not tabular statements.

19. I will now, as His Excellency the Commander-in-Chief did me the honor to request, though with much diffidence, offer my own opinions and views, but in doing so shall endeavour to support them by giving the results of my various experiences in the Himalayas and on the Neilgherries, both while actively employed, and visiting the localities for pleasure. I wish to premise by offering my ideas of the reasons why hill stations have not hitherto generally produced such results as, *cæteris paribus*, every one had a right to expect; and then to submit for consideration a few suggestions, which my own experience lead me to believe, if adopted, might be productive of fortunate results, or at all events be beneficial in many instances. A perusal of the various extracts from periodical reports and returns will, I think, serve to prove that my opinions have not been hastily formed, but from conviction, and the occurrences and circumstances which came under my notice during the periods treated of. Considering the subject in relation to the health of the Soldiers, the requirements of the Service, and the general economy and advantages to the State, I think one of the first and most important is the bodily health of the Soldier on the plains, and, second, the circumstances and conditions under which he might be most beneficially removed to the hills. When a Regiment or other body of men are about to be sent to a hill climate, I should

have every Soldier carefully examined by a competent Medical Officer, experienced in Indian habits and diseases. I trust it will not be considered out of place or presumptuous in me to suggest the appointment of a specially selected Officer for this duty, one who has served principally in the tropics, continually with Europeans, having also much hill experience. Those whom he thought unfit to proceed to the hills at once to be placed under preparative treatment till deemed fit. I would then take clothing into consideration, and most strongly recommend that the whole of a Soldier's clothing, both inner and outer, be entirely woollen, as well as his socks, and his boots good European properly made ones; much of his comfort in wet weather depends on the latter article.

3rd.—As to the best season of the year, that must be greatly dependent on several contingencies, the distance to be traversed, mode of transit, &c., but at the latest, I think, at all events with reference to the Neilgherries, men ought to be sent up by the end of January. I have now brought the men, we will suppose, to the foot of the hills. The Coonoor Ghaut is at present the only safe one. Let some men and an Officer be sent up one day in advance, and send in their charge a warm suit of clothing for every man, to be put on immediately he reaches his barrack-room—there ought to be fires lighted in each room, and the men then get a comfortable breakfast. After this, with ordinary care, they will, I believe, do well, and repay the State by their vigour and efficiency whenever required for any service. A little care and surveillance is requisite at first. Men ought not to indulge their appetites too freely, as the bracing nature of the climate induces, because the functions of their organs will be very differently excited by the change, and both the secretions and excretions materially altered in form and quantity; as for instance, the act of micturition will be more frequent, and the secretion larger in quantity; the skin, save after exercise, will almost cease to act till the warm months ensue.

20. And now, supposing this or any other body of men about to proceed to the plains, I would again have them equally minutely inspected by the same experienced Officer, or another to act in conjunction with him, which would be

still better and more efficient. Nearly every thing would, of course, be reversed.

21. I should leave all men behind who are ailing, and not likely, as probably enough would happen in some cases, to be benefited by change to a warm climate, till pronounced well and fit for tropical service. I should recommend men to commence their march about the middle of October. On reaching the foot of the hill, let dry clothing only, of light texture, be ready. To carry out this plan efficiently, it would be necessary to have a certain amount of good accommodation provided under proper medical surveillance, either near Bangalore or Mysore, which done, a system of mutual exchanges, on communication between the sanitary inspecting Medical Officers on the hill and plains, might be effected at a trifling expense to the State, and with much convenience and advantage to both Medical men and Soldiers. I have frequently lamented the absence of such an institution in both situations.

To conclude this portion of the subject I have just a few words to say.

22. It always has been a project of mine, ever since I had any experience of Indian service, to see the greater portion of the European British Army located at least four thousand feet above the sea level, and not, as a rule, higher than six thousand. To carry this out, properly protected rendezvous should be erected, with provisions and the necessary munitions of war, as well as Arsenal and Ordinance supplies, garrisoned by a sufficient number of Europeans to defend it. Railway branches connecting them with the main line, the buildings, of course, erected at distances and localities to be decided on by Military, Political, and Strategetic Officers; in connection with such a system, I would have married quarters built at hill stations, with schools for the children, workshops for the boys, where they might be taught useful trades, and the girls all that was necessary to make good, useful, and industrious Soldiers' wives. When a man's turn came round for active service in the plains, he should leave his wife and family till his tour of duty was finished, when he would return with double enjoyment to find lusty boys and girls improved both in stature, intellect, and information. Under such a system, Pensioners would soon begin to locate on the hills instead of going home, and the style of Recruits, as well as the expense of obtaining

them, would be materially altered to the infinite benefit of all concerned. For the picture of a Soldier and his family located on the hills and in the plains—*vide* Extract in Annual Report for 1854-55.

To proceed with my subject; want of attention to many of the points I solicit consideration for, has been one great reason why hill stations have on several occasions been unjustly abused. I will revert to the state of the 29th Foot, with which distinguished Corps I had the honor to do duty for six months under their then Surgeon, (now Inspector-General) Gurney Taylor, during a violent epidemic attack of cholera in 1844-45. To the best of my recollection, over three hundred men were attacked at the station of Meerut, and a great many deaths occurred; the constitutions of a number of the men had been previously greatly tried by a severe form of fever which was prevalent at Ghazeepore during the rainy season of the year they were stationed there, which, coupled with the cholera, and added to the fact that after a few months' residence at Kussowlie, they were suddenly re-called to the plains for service, and bore the brunts of the severe battles during the Sutlej. campaign, resulted in their being attacked by a severe form of scorbutic diarrhœa on their return to Kussowlie; yet, notwithstanding all such disadvantages, climate carried them through, the mortality was small, and their Surgeon records, "many valuable lives and much treasure saved to the State."

24. I shall next advert to my residence for six months at Kussowlie, where I afforded gratuitous medical aid to all the residents. I was myself on leave; they were all up there in search of health, save one or two Government Officers and their dependents; there were some very severe cases, all benefited greatly; most had quite recovered health, spirits, appetite, and vigour, before I left.

25. My next experience was in being sent to form a Sanitary Depôt for the reception of Invalids from the different Regiments serving in the Punjab, but more especially at Peshawur, in the strength of a provision to be left at this station, named Murrie, in the Cashmere range. I built a house, served there nearly a year, but before my house was finished, my services were required at Kirkee in Bombay, to reach which I had to travel two thousand miles. To the best of my recollection there were above 100 Invalids. A Company of Guides, and between

thirty or forty Officers; the climate was delightful during the warm weather; it is very cold during the winter months, snow falls and lies for a time. The Invalids were then sent to the plains. The place for their residence was a long building, constructed of wood entirely; the Soldiers on arrival were about the most emaciated miserable men I ever saw together in India, every one of them had functional disease of some organ, many of several. I think only one death occurred in the case of a Soldier who arrived far gone in phthisis—not a single death occurred amongst the Officers or their families. No one would have recognized the men when they left for the plains.

26. My last experience was with my own Corps, on the Neilgherries. I shall allude more fully to this when referring to the statistical results in the different tables.

27. I shall now conclude by reiterating a hope that the shortcomings, either in my tables or report, will be set down to the peculiarly awkward circumstances under which the former were constructed, and the latter written; most of the information we were obliged to search for and extract from the hospital records, as what we could obtain from the orderly room regarding men who were no longer effective, was meagre in the extreme. I mean, of course, men discharged, invalided or died. In this undertaking I am greatly obliged to the zeal, intelligence, and active assistance afforded me by my two principal subordinates, Second Apothecary L. L. Dyce, and Assistant Apothecary J. Walker. I believe the tables to be substantially correct, and very nearly if not quite accurate. I feel convinced that if His Excellency the Commander-in-Chief will do me the favor, can spare time, and will kindly take the trouble to glance over the work, he will feel convinced that no want of willingness on my part has delayed the report a day.

28. In conclusion, just as I hoped to have some time at my disposal for the correction of this report, an unfortunate outbreak of Cholera occurred in the 74th Highlanders, which so entirely absorbed my attention, as to preclude me from undertaking any other employment for a period of nearly ten days, which now leaves me on the eve of embarkation for England.

J. MACBETH, M.D.,
Surgeon Major, H. M.'s 74th Highlanders.

MADRAS,
7th March 1864.

Extract from the Annual Report, from 1st January to 31st March 1854.

During the progress of the various details of the Corps om Madras to Trichinopoly, the Head Quarters, although ost numerous, did not lose a single case by Cholera, and ıly two altogether, one from Delirium Tremens and ıe other from Typhus Fever; for which several reasons ay be adduced, but the principal one, I am inclined to ıink, is from the arrangements of the Officers in command, hose intimate acquaintance with all the habits and require-ıents of Soldiers, particularly in India, as well as the ature of the country and mode of progression, halting rounds, &c.,—a knowledge most essential to the comfort and ıfety of Troops marching, more especially in this Presi-ency, where so far as I can learn, Cholera seems to be ı almost certain concomitant of every body of Troops ı *route.*

The second march of the Head Quarters of the Regiment, om Trichinopoly to this place, with only a single case of holera, goes far to confirm my opinion on this point.

The most unfortunate Detachment of all, was that which ft Madras for Trichinopoly viâ Tranquebar, under the ıre of Assistant Surgeons Warden and Bell. There had een a few cases of Cholera before the Detachments left Iadras, and they unfortunately took the disease with them ı board, and subsequently suffered from it on their march om Tranquebar to point of debarkation; they lost 21 men y Cholera and two by Apoplexy, and the Assistant Sur-eon in charge was himself attacked but fortunately recover-l. The men of the Corps, who served through the Kaffir Var, having been exposed to much fatigue, privation and ardship at the Cape on Field Service, where, as well as I ın learn, the diet was not of the best description, eaten at ncertain periods, and vegetables extremely scarce and ear, together with the subsequently long voyage, during hich a similar want existed, and salt provisions were the aple of their diet, would have almost led one to expect ıe development of scorbutic diseases, yet in reality they do ot seem to have occurred to any extent.

Fevers appear to have predominated, more particularly ommon continued; but I cannot help feeling certain that slight mistake has been made in this particular, as my

own experience of nearly ten years in India has taught me that common continued Fever, such as is met with in Europe, is extremely rare, and nearly all Fevers of this country are either of a remittent or intermittent type; no less than 47 cases of common continued Fever are mentioned, of which one was fatal; the man died on the march, no Autopsy was performed, and as well as I can learn the disease was of a typhoid nature.

Numerically, Cholera appears first, no less than 45 cases having occurred, of which 25 proved fatal; of these, 21 belonged to the Detachment under Major Handcock, to which I have already alluded. No *post mortem* was made in any instance; indeed, I am given to understand that such examinations are discouraged in fatal cases of Cholera.

The other three fatal cases occurred at Head Quarters, under the medical charge of Assistant Surgeon Lapsley, who seems to have been successful in the majority of cases by pursuing the Calomel and Opium plan of treatment. Cholera seems to have been the only epidemic disease during the period treated of. Of other bowel affections, Diarrhœa has been very prevalent, and now exists to a considerable extent and of rather an aggravated kind; no case has as yet, however, occurred which is not distinctly traceable to either a previous attack of a similar kind, or as complicated with other affections superinducing the disease.

I have been very careful on this point, being aware that a form of Diarrhœa was prevalent in more than one of the hill sanitary stations of Bengal.

All the cases have, as yet, yielded to treatment. I am induced to attribute the prevalence of this disease in the Regiment to the causes I have already mentioned, viz., the length of time the men were on salt provisions and the scarcity of vegetables, as I consider it of *scorbutic origin.*

Syphilis.—Of primary Syphilis, an unusually small number of cases appear, and they have been mild in form; but the number of Buboes seem large in proportion.

A case of amputation was performed by Assistant Surgeon Warden on ship board, but I have no history of it here. The man is now at Madras. Every man in the Regiment has been either vaccinated, or bears marks of natural Small Pox.

The most remarkable feature in the sanitary history of this Corps appears to me the unusually large number of

Recruits, to old Soldiers, who are ill. I am aware that this generally prevails to a considerable extent, but scarcely I think to what my returns shew. It may in some measure be accounted for by the fact, that all the other Soldiers have been somewhat acclimatized to the tropics by the African campaign, while the Recruits having been at once placed under the influence of an Asiatic sun, and led away by the example of the older Soldiers, have unnecessarily exposed themselves to it.

From the Quarterly, 1st January to 31st March 1854.

The large proportion of cases treated have been of Diarrhœa and Fevers, of the former there have been 46, and no deaths have occurred—this form of disease is at present rather prevalent.

From the Quarterly, 1st April to 30th June 1854.

The climate of Jackatalla has been as yet less variable than at any other station I have visited in the tropics. The quantity of rain which has fallen is very trifling, and the range of the thermometer generally not great, though once for a few days it rose as high as 110 in the sun's rays. The prevailing diseases have been bowel complaint and fevers, of the former, I regret to record no less than nine cases proved fatal at this place and two at Trichinopoly ; eight of dysenteric character and one from Diarrhœa of long standing. The total number treated has been of Dysentery 22, of Diarrhœa 65, together 87. The cases of Diarrhœa, though generally severe, (except those which merged into Dysentery, and are accounted for under those heads), all did well save one who died, and the *post mortem* showed that he had suffered long and severely from it in earlier life. I am of opinion that in cases displaying so terrible examples of so fatal an amount of inflammation which must have existed to bring about the complete destruction of the large intestine in so short a period, no dependence can be placed in any mode of treatment save Calomel and free use of the lancet, (when the subject can bear it), with local bleeding and fomentation, assisted, when judicious, by Anodyne injections, counter-irritants leeches round the anus and suppositories.

In two of the cases now convalescent, pieces of lymph, resembling the mucous membrane of the gut, varying from two to three inches in length, came away, after which immediate relief ensued. Should the disease again shew itself

at this station, I should feel inclined to try immediate change of air and situation if I can obtain the means.

Fevers.—Fifteen ephemeral, 25 intermittents, 30 remittents and 11 cont. communis have been treated. The first class were all of a mild character, the second and third rather severe, but amenable to treatment ; one fatal case occurred, it commenced with Dyspepsia succeeded by severe Diarrhœa, and ultimately lapsed into a case of low Typhoid Fever and killed him. There were 17 cases of Ophthalmia, four at Head Quarters and 13 at Trichinopoly, they all yielded to treatment except one, and in this case the sight of the left eye was lost. One case of Phrenitis occurred, he was admitted on the 26th April and died on the 1st of May, and on examination lymph was found effused on the upper surface of the brain and a large quantity of serum at the base. The cases of Rheumatism were all severe, but yielded to treatment, those of syphilitic origin to Iodide of Potassium and Sarsaparilla, with Blue Pill, assisted by the usual local remedies. One case of Amentia of a mild description occurred at Trichinopoly.

From the Quarterly, July 1st to 30th September 1854.

The health of the Corps at Head Quarters during the quarter has scarcely, I think, a parallel in any of the Colonies, and bears a favourable comparison with Regiments on Home service, a fact which confirms the opinion I submitted to you on a former occasion, with some difference, that the late bowel complaint was entirely irrelative to climate or situation, and entirely of an epidemic character. During the quarter, the total number treated has been 121, of which 23 remained from last quarter only, 98 having been admitted during the quarter; for eight days I had only five men in hospital, there are now ten, and the number of convalescents outside has averaged below eight during the period named.

Prevailing diseases have been remittent and intermittent Fevers, Venereal and bowel complaints, from the latter two deaths have occurred at Trichinopoly ; two fatal cases occurred at Head Quarters, one from abscess of the liver, which burst through the diaphragm, and the other in a confirmed drunkard, from the effects of a debauch ; five cases of diseases of the eye occurred, but all yielded to treatment, and all the men are now at their duties. Complaints relative to impro-

per supply of bread were necessary, both for last quarter and also for this. Steps were, however, taken by the Deputy Commissary General of the Army to rectify it. The abandonment of early morning parades has had a marked effect in improving the sanitary state of the Corps, which confirms the opinion of myself and others on this point.

From the Quarterly, October 1*st to* 31*st December* 1854.

It affords me much satisfaction to record the continued healthiness which prevails. The total number of admissions at Head Quarters have been 72, with an average strength of 611 ; while at Trichinopoly, where there is a Detachment of 233 men, the admissions amount to 105.

With reference to the effects of the sun on the European constitution, the result of nearly a year's experience amongst the 74th soldiers tends to prove that not only may the men work all day long with impunity, but, further, that men so employed are, *cæteris paribus*, more healthy and robust than their comrades who simply perform the ordinary duties of a soldier; and from the result as yet obtained, the expediency of sending a Regiment on its first arrival in India direct to the Neilgherries is beyond the possibility of a doubt in so far as health is concerned—indeed, it is only necessary to compare the relative proportions of sick at Head Quarters and the Trichinopoly Detachment—and I feel convinced that the residence of a newly arrived Corps, for two or three years, on the Neilgherries, canot fail to be of the greatest advantage both to the Corps and the State, inasmuch as while it to a certain extent accustoms the men to bear the heat of a tropical sun, it strengthens the constitution and invigorates the frame; and I trust it may ere long, become evident to the authorities that, not only as a sanitary, but in an economical point of view whenever it is compatible with the requirements of the service, a hill climate in India is the place for Europeans during the hot season.

The prevailing diseases, if any can be so designated, have been Fevers of a mild description and easily controlled.

Three fatal cases of Hepatic diseases occurred during the quarter, the only fatal cases; the men had all previously suffered from liver.

One case of Paralysis of a severe character occurred, the man had been several times in Hospital with different minor

affections and was a hard living soldier. He was suddenly seized with a kind of fit and was brought to Hospital insensible, and with total loss of motion and sensation on the whole of the right side, in which state he continued for three days, save at intervals, when roused, he showed partial consciousness. He was treated with Calomel and Opium and James' Powder, with a blister to the head and along the spine, mustard sinapisms and counter-irritants repeatedly.

He gradually recovered the power of speech, after the mercury had affected the system, and the blister to the head and spine had acted; but it was a much longer time before sensation returned, or the natural warmth of the limbs, and still longer before the motive power was established. He is now, however, walking about convalescent.

From the Annual Report, April 1854 *to* 31*st March* 1855.

There can be no doubt that generally speaking, Scotchmen drink more proportionally than the men of the other two countries, but as neither Hospital nor Orderly room records show any thing to prove it, as unduly affecting either the health or morals of the Corps, it is a proper deduction that this vice does not exist to any injurious extent. But I may remark that I do not consider the price of Porter as sufficiently lowered to induce the soldier to substitute it for Arrack. He must pay 1½ annas for his pint of Porter, and he can get his dram of Arrack for one anna. I feel convinced it would be conducive to the health and comfort of the soldier, were malt put as cheaply as practicable within his reach, and then might not his surplus pay go to give him a pint of Porter as part of his messing.

Principal classes of Diseases.

Numerically Fevers have been 219, but generally of a very manageable kind, some of them severe enough, but amenable to treatment, and the majority have nearly disappeared under the favourable influence of this fine climate. Only one fatal case occurred, and that in the instance of a man who had reached this station from the low country. I of course allude to those men who were here during the year. A considerable number of Fever cases accompanied the Trichinopoly Detachment, all doing well; however, the man alluded to lingered a long time, but the disease assumed a typhoid character and carried him off. Next numerically come bowel affections, of which I regret to say, I cannot

ive so favourable an account: the number treated was 239, f whom 23 died and two were invalided to Europe; of these, Cholera cases proved fatal *en route* in the low country, nd here, at this station, 26 cases of Dysentery and 81 of)iarrhœa occurred. When bowel affections first became requent, after a careful consideration I came to the conlusion that a predisposition existed in the individual, and vas more justly attributable to relaxed habit of body han to locality. I had seen a great deal of the disease named *Scorbutic Diarrhœa* on the Himalayas, from which the 29th 'oot suffered severely, and through the circumstances under vhich the 74th arrived here, rendered them peculiarly suseptible of such attacks, having recently left the field, vhere vegetables and fresh provisions were scarce, and had long sea voyage, during which a similar scarcity prevailed, further acquaintance with this place, and experience of he disease, have served to convince me regarding the orrectness of my premises, though I think its application often of great variety as to the ultimate working effect nd result.

There can be no doubt that during the latter part of pril and throughout May, an epidemic tendency to bowel ffections existed very strongly, but more particularly and evidently developed in the persons of those recently arrived from he low country, still more conspicuously evident and fatal those who had recently suffered from, or had a decided ndency to organic disease of the abdominal viscera. This ist result has shown itself more decidedly with reference the portion of this Regiment recently arrived from richinopoly than I ever witnessed before. The strength f the Detachments was 273, of whom at least 80 where eated for different bowel affections more or less severe, and veral deaths occurred. The Hospital has been filled with ses of this class ever since they arrived.

In the original attack, on finding the dysenteric symptoms very severe and speedily fatal, I resorted to various modes treatment, generally placing my greatest reliance on Calomel as the base of operations. I tried also most of the recent d approved modes of treatment with very indifferent sucss. Those who write about Dysentery at home, and give u a treatment extending over a fortnight or three weeks, ould do little towards helping a patient in the form of sease under consideration, which, without prompt measures

carries off its victim in 50 or 60 hours, and leaves you with no large intestine or anything resembling one, but only a blackened and sphacelated pulpy mass of putridity.

I confess to a prejudice against large general bleeding in most tropical diseases I have met with in India, away from large sea-port towns, where you have robust, or, at all events, full-blooded European constitutions to deal with; but in the form of Dysentery now treated of, the effects of full bleeding both local and general, but more especially the latter, accompanied by scruple and half scruple doses of Calomel alone, with mercurial inunctions and grain doses afterwards, till the system is affected, followed by castor oil, gives the only sure mode of safety, and rarely fails if you see your patient in time (a very few hours after, turns the balance), the disease is cut short, and your patient makes a speedy and a satisfactory recovery.

The Diarrhœa of these hills is also of a severe form, but has been much more easily brought under control by a modified degree of the same means. The climate and altitude, I belive, are antagonistic to Cholera; of the cases which arrived up here the fatal ones were generally beyond treatment before I saw them, those in which I was successful were, which one exception, treated principally by Calomel and Opium, and did not individually present any very new or remarkable feature worthy of record. One case was treated by the cold douche, and the experiment was attended with the most remarkable and speedy success.

I consider I am justified, from the circumstances which attended the attack of this disease, in feeling confirmed in an old idea of mine, that altitudes such as Jackatallah are antagonistic to Cholera; nothing more decidedly corroborative of it could have occurred than the instance I am now treating of. The disease, commenced with fatal violence at the very foot of the hills, the whole detachment were immediately marched, and permitted to march through, water with their shoes on and clothes. In this state they marched 17 miles, and from this cause I found on their arrival a strong and decided tendency to bowel complaint among the greater number of them, and prescribed for about 80. The disease was suddenly and happily cut short, but I have no hesitation in saying, that had it occurred in a similar manner in the low country, one-half of the detachment would have suffered. One case of amputation of

the thumb from an accident occurred, and one case of compound comminuted fracture of the clavicle; both did well.

General Remarks.

A very evident cause affecting the health of the men consisted in flooring the temporary Barracks with bricks; this was repeatedly pointed out and brought to the notice of the authorities, but only one room was floored with wood as an experiment. Another cause was the thick wooden forms on which the men slept not being adapted to the climate. I induced the Officers Commanding and other Officers to make the men provide themselves with mattresses. Another fertile cause of disease in this climate is the marching of troops to the hills at too advanced a season of the year—witness the recent detachment from Trichinopoly; also in marching, where Cholera is so prevalent as in this presidency, the marches are too long, and the men march too early in the morning. No march, in my opinion, should exceed ten miles, and might be less with advantage. Again, the men sleep on the ground and are not allowed even straw, save for special reasons and when specially recommended by the Medical Officer. I consider marching men up to this climate indiscriminately, without the previous opinion of a Medical Officer experienced in hill climates, is productive of mischievous and often fatal results. No person suffering from, or greatly predisposed to, organic disease, ought to be sent direct to the hills after any prolonged residence in the plains, but to a more intermediate station, such as Bangalore. For the same reasons I think it worse than useless to send men severely ill and likely to improve by a radical change of climate here for short periods; because there are not many soldiers' cases, who will derive much benefit from a six months' residence here, and next, it requires care and experience to select the men from a Regiment who would actually be injured by a sudden change. The system acts differently in Bengal, where nearly all the troops are stationed above Meerut, most in the Punjaub, where, for seven months in the year, the climate is cold, sharp frosts and ice made in the mornings, which state of things prepare men for a hill climate. It is different in Madras, where you frequently march men some 17 miles from a temperature of 112 to one of 65, and after a fatiguing march, the men find themselves with the Liver and Kidneys both indolent, and in many cases the former, if not

in an incipient state of disease, at all events very torpid, yet suddenly called upon to perform more than their ordinary and natural functions, in consequence of the skin not performing its functions with the same rapidity as it did on the plains. It is to be hoped that the day will soon arrive when every European it is possible to spare from the plains, shall be located on the hills at least 4,000 feet above the level of the sea.

From the Quarterly, April 1st to 30th June 1855.

Since the Annual was despatched, nine fatal cases have occurred, three from acute affections of the Liver, three acute Diarrhœa, one Enteritis, and one from Aneurism of the arch of the Aorta, and the ninth from acute Dysentery. The circumstances and results in nearly all the fatal cases fully bear out the opinions I ventured to express with reference to the imprudence and inexpediency of sending men up suddenly from the plains to this altitude, indiscriminately and without the previously obtained opinion of a Medical Officer; and so long as this practice obtains, so surely will fatal results ensue, and the mortality at this station be more than doubled.

From the Quarterly, July 1st to 30th September 1855.

During the past quarter I regret to record that there have been seven casualties, three from acute Hepatitis, one from Hepat: chron., two from acute Dysentery, and one from that form of Fever rarely observed in India, viz., common continued.

From the Quarterly, ending 31st December 1855.

The sanitary condition was wonderfully improved this quarter, the aggregated strength was 512, of whom 16 remained, 81 were admitted, 91 discharged and 4 remained; of these two died, one a man who was invalided by a Committee, and the other an old and worn-out soldier who had previously suffered from divers severe Chest affections. Of the 81 admissions, 13 were Invalids, who, under ordinary circumstances, would have been removed from the strength of the Regiment, and can scarcely be considered as legitimately entering into the sanitary results of the place. Of the three fractures, two were speedily cured, and the third was more tardy. Three cases of Ambustio occurred, one very severe (the men were employed on the Government

orks), he was very much burnt about the face, and the sion of the right eye entirely destroyed, he recovered owly and returned to duty.

From the Quarterly, ending 31*st March* 1856.

The Invalids marched January 11th, and the Recruits ined February 23rd. After the latter date the number of :k was at once more than doubled, principally Buboes, the sult of marching after being so long on ship board; then ;ain at the close of the quarter, 100 picked men marched om the station, at once reducing the strength by one-fifth. nly two cases of Fever were admitted last quarter.

Three cases of Dysentery, all severe; eight cases of heumatism, four obstinate and four the reverse; Venereal ' a severe form and mostly complicated with Bubo. One ıse of Calculus Vesicœ, stone crushed with lithotrite, nearly ; for duty; two cases of obstinate Cephalalgia, pain long ›ntinued, and acute symptoms gradually yielded to long ›ntinued counter-irritation; no fatal case occurred.

From the Annual Report, April 1855 *to* 31*st March* 1856.

The principal classes of disease treated throughout the ear have been Bowel complaints, Hepatic disease, and evers. Of the first 91 cases occurred, of these 26 were :ute Dysentery, 40 Diarrhœa; of the Hepatic, 26 were :ute, six chronic, and two icterus; of Fever 48, principally ıtermittent and remittent.

An epidemic tendency to Dysentery and Diarrhœa occurs ı the climate of Jackatalla, during April, May, and June, ‑so observable in all the hill stations occupied by European 'oops in Asia now, however much modified in degree, umber, and severity, at those places where proper pre-ıutions have been adopted and good accommodation rovided.

I must remark the form of Bowel complaints generally ver the Himalayas was milder, and comparatively rarely ısumed the acute form. It is an undeniable fact, that both 'atives and Europeans are subject to the disease here at ıis period, but it is also certain that the persons attacked ›re lived in low-walled, badly ventilated and floored houses; ıis applies to Officers as well as to men, women, and ıildren.

The occurrence of cases has become less frequent, the symptoms milder, and the recoveries more rapid. My deduction, therefore, is, when the men get into good Barracks, and proper medical precautions are adopted to prevent those suffering from latent organic diseases being sent up, until prepared by treatment, that the disease will be nearly eradicated or of so mild a form when it does occur, as to give neither patient nor medical man any uneasiness.

The abolition of morning parades continues to exercise a satisfactory sanitary influence, and the employment of men all day long out out of doors (taking care to protect the head) has substantiated previous experience as to its healthful tendency.

I do not believe it possible for any Commanding or Medical Officers effectually to prevent the spread of any serious inconvenience from Venereal disease, when they do get among native women, without the existence of a Lock Hospital, and I strenuously recommend the establishment of one at this station.

From the Annual Report, April 1st 1856 *to* 31*st March* 1857.

It will be observed that the largest number of Bowel complaints particularly were admitted in April, May, and June, and again in September and October, indeed the number of admissions from all causes was greater in the first than in any subsequent quarter. It may be looked upon as the sickly season in these hills.

The larger number of cases have been, Venereal 76 ; next Diarrhœa 56; third, Hepatic affections 34; fourth, Fevers 28 ; fifth, Dysentery 24; diseases of the Brain 19 ; Pulmonic affections 18; Wounds and Injuries 24.

No one can wish to blink the fact that the skin is the grand excretory agent in the low country, and that to a certain extent the functions of the liver, kidneys and bladder are comparatively less actively called upon than in a cold climate, and that all the excretions, save perspiration alone, are voided in smaller quantities after a certain time, modified, of course, by different constitutions, circumstances, and localities.

The new state of affairs in ordinary health becomes the established rule, and the organs referred to being less actively called on do less work, and in many instances become more

or less torpid, ending occasionally in some congestion, or perhaps Diarrhœa. Such being the case, it ought not to be deemed a prudent measure to expose persons having a tendency to either of the above evils at once, and without preparation, to a cold climate, where the skin is shut up in a moment perhaps, and the congested and feeble organs called upon to do double work

Let any one who has ever arrived on these hills recollect for a moment that shortly after his arrival either every one of his secretions were wonderfully increased, or that he had what is commonly called Hill Diarrhœa, a direct effort of nature to relieve herself. If he has not either to some extent, he is probably laid up with congestion of the liver, lungs, or kidneys, or headache accompanied by Fever. Great attention should be paid to the clothing.

With reference to the clothing of Soldiers in this country, and indeed in all tropical climates, I think it would be a most beneficial change to the soldier if his calico shirts were entirely dispensed with, and colored flannel ones substituted. It is quite impossible to prevent men throwing themselves down, reeking with perspiration in draughts ; and hence, in my opinion, the origin of many of the most sudden and serious attacks of various forms of diseases we have to contend with.

I am strongly of opinion that when it becomes necessary to move troops at unfavourable seasons of the year, and through unhealthy Districts, it would not only prove judicious, but positively economical, to diminish the sick by providing them with transits.

I had the honor to bring to the notice of the authorities that of five picked men of Her Majesty's 74th, two had dangerous attacks of Jungle Fever. In England, Scotland, and Ireland, now troops rarely march, and though Railroads do not as yet exist to any considerable extent in India, still bullock transit to a large amount could at all times be procured, and if it is a fact that each European on the hills stands Government £130, the cost of transit will be much the most economical mode in the end.

From the Annual Report, from April 1st 1857 *to 1st March* 1858.

Barracks, when it is necessary to construct them in the plains of India, ought, in the first place, to be built on ground

capable of the most perfect and easy drainage, high arches, and be in themselves lofty and thoroughly ventilated. I mean not the ventilation afforded by doors and windows, but independent ventilation from and with the external air. That each soldier should have a minimum of 2,000 cubic feet of air; the sleeping apartment to be used only for that purpose, to communicate, however, with the eating rooms by wide open arches, and beyond these an open verandah. At one end of each block, lavatories for ordinary purposes, a urinal with water constantly flowing through it, a covered plunge bath, and a water closet to be used only at night; at the other end, washing, cooking, and smoking rooms; no smoking to be allowed in either the sleeping or eating rooms. All the rooms to be well boarded, each soldier to have an iron bedstead to fold up in the centre, and mattresses, with at least one blanket. The arches could be cook-houses, stores, godowns, &c., and in every situation well made glass windows. In high altitudes there are no objections to occupying the ground floor, but all rooms to be boarded. The ground floor of no building in India should ever be occupied as wards for sick.

In marching, whenever it is practicable, let soldiers be sent to their destinations either by rail or transit, when that is not possible, do not overcrowd them in tents, let each man have a small couch to keep him off the ground, and a good blanket to cover him. Never march men more than 10 miles in 24 hours save on service, or when it is absolutely necessary; and when there is not a perfect certainty of good pure water, both during the march and at its termination, carry it with the men at any expense. At the end of each march or sharp drill, hold Non-Commissioned Officers and Officers of Companies responsible that the men change their flannel and stockings, hanging the others out to dry, weather permitting; let the whole of a soldier's clothing, inner and outer, be entirely woollen, thinner or thicker according to the season, climate, or other circumstances, but still woollen. Have no stocks, and the trachea free and unpressed on in all its length. Let the head-dress be of any shape you choose, but soft and pliable, that is, of a substance that is capable of adapting itself to the conformation of the men's heads, color white in India, but the shoes should be of Europe leather, pliable and stout.

With reference to the climates of Asia throughout the extent of the Himalaya range in Bengal, from Cashmere to

Darjeeling, and all over the Neilgherries, I am firmly convinced that there is no climate, after 4,000 feet up to 8,000 or 9,000 better adapted for the European constitution in the whole world; and were proper Barracks erected, all the Europeans who could be spared from duty in the plains should be located in them, good married quarters added, schools built and endowed with good roads and railways to the foot of each, with large commodious fortified Barracks on the different lines at important and centrical places. The Indian Army would be the finest, the most efficient, the healthiest, and the most readily available of any in the world. Let no soldier ever take his wife or children to the plains, but let them be cared for and provided for by Government, and it would soon materially assist to recruit itself by acclimatized soldiers, when Pensioners, instead of returning to England, would colonize the hills, happy in the prospect of seeing their children rise up, while, if ever necessity demanded it, they would be able and willing to defend their comrades, wives, and children when they had gone on service, their daughters would become respectably educated, and suitable wives for the well-behaved men.

A great boon to soldiers would be a regular supply of good wholesome malt liquor and aërated waters in the plains at a price that would suit their means, and very much diminish, if it did not entirely supersede, spirituous liquors. Aërated waters are now expensive luxuries, and much beyond a soldier's means. If machines were worked under proper surveillance, it would become a cheap and wholesome drink, and, on emergencies where water could not be had, a portable substitute.

From the Quarterly, April 1st to June 30th, 1858.

The Bellary Buboe is, by far, the most peculiar form of glandular disease I have ever met with. It attacks the inguinal glands, and in most cases without being traceable to any assignable cause unless an anæmic and cachectic habit of body, acted on by increased velocity of the circulation, and the persistent high temperature of the place.

The glands begin generally to swell without much pain, there is at first very often but not always redness of the integument, but all active inflammatory indications speedily give way to leeches and mild local applications. Not so the hard, ness and abiding enlargement, which, having arrived at a

particular stage, can neither be forced to dissolution nor suppuration, but obstinately remains, acting in process of time so entirely as a foreign body, that suppuration of the surrounding tissues in some situation or another takes place, and then, the sooner you make a free opening, the better for your patient, and slow, as it usually is, the more speedy the recovery.

I have put in practice every imaginable kind of treatment, both local and constitutional, I regret to add with equally unsatisfactory results. Indeed, the only decided conclusions I have arrived at are, that you must not confine the patient to bed, that you must give a good and slightly stimulating diet, and use the knife the moment you are satisfied that fluid has formed.

From the Annual Report for 1858-59.

Duty and Employment.

Under this head I regret that I am compelled to state that drills, parades, and hours of parade were in my opinion prejudicial to the health of the men, and persisted in from the period of my first representation up to 31st July 1859, which resulted in to me a most uncongenial and disagreeable correspondence. Still my earnest sense of duty, and the paramount importance of the subject demanded it, and led me ultimately to express my sentiments so strongly, as to call down on me subsequently the censure of the General Commanding the Division, on the appeal of the Officer Commanding, as to my style. Bowing to superior authority, I, as a matter of course, expressed my regret that such an interpretation had been put on any part of my correspondence. From deference to the General Commanding, I without hesitation withdrew and begged to apologise for any part of it, but earnestly deprecated and repudiated the remotest intention of showing disrespect or expressing myself in terms stronger than I deemed the urgency of the case rendered imperative. Nay, further, that I respectfully submitted, I could discern nothing in my correspondence bearing such a construction.

The first course I adopted was seeking personal interviews with my Commanding Officer, trying to convince him of the necessity for adopting my views. I then wrote, thus ensued the correspondence referred to. I never neglected my duty in first urgently and personally representing, but failing to

attain my object felt it absolutely necessary to record and remonstrate. I now beg to state my reasons for doing so.

During the hot season, I mean the period embraced in the time to which the correspondence alludes to, no less than 184 cases of Fever came under treatment, besides a vast number treated as Dispensary patients, there being actually insufficient Hospital accommodation; further, I represented that with reference to recruits no less than 60 were under treatment for Fever, making it apparent that nearly one-third of the whole were twice under medical treatment, some oftener; still, regardless of this, I was not only unsupported, but greatly opposed by the Officer Commanding.

I have already formally represented so much in my Quarterly Report, I now beg to add, experience has taught me that in India during the hot season it is decidedly injurious and imprudent to have evening parades at all, unless absolutely necessary for urgent special reasons.

After the discomfort, lassitude and fatigue of a day in the hot season, a soldier, if left to himself, would naturally embrace the opportunity of going out for wholesome exercise of some kind; whereas, if compelled to dress and attend a parade, however easy, he returns to his barrack-room hot and uncomfortable, perhaps a little discontented and does not leave it. Having been drilled in the morning and expecting a parade, the chances are he lounges about most of the day half asleep and half awake. At this station there is no possible opportunity or means of amusement. Mark the result, he cannot sleep at nights, he is feverish, irritable, and restless, and to my personal knowledge many such men leave Barracks and resort to places where they can indulge in the most painful description of debauchery and drinking.

It is occasionally stated that if a man or men go and walk about all day in the sun, what harm can parades do; surely there is no analogy between what a man does for his own pleasure and will soon abandon of his own accord if he finds it disagreeable or hurtful, and what every man must do irrelative to his feelings, constitution or inclination—hence the differences. Let men have the evening to themselves, at all events during the hot season; two hours drill in the morning is as much as is good for any European soldier, at the very outside, I think considerably less in such a climate as Bellary, and all ought to have their accoutrements off by 7 A. M. and be under shelter.

Crime and Punishment.

The remarks I made under this head last year entirely apply with the following exception. Nothing has been done to improve the ventilation or increase the accommodation of the cells; last year 11 men were treated for drunkenness, this year 13; total crimes last year 33, this year 40; strength this year 957½, last year 1,064; but as I have remarked under the head intemperance, there has been increased drinking to an unusual extent.

General Remarks.

Having under the separate heads entered fully into my views on all the subjects of material importance, I have little to add under this head, save to *repeat*, that in my opinion long drills, exposure to the sun unless absolutely necessary, and evening parades at all during the hot season, are decidedly prejudicial to the health and comfort of the soldier.

There does not appear to be in some Commanding Officers an adequate conception as to the vast importance of providing amusement or occupation for the leisure hour of the soldier. I used every argument in my power to impress this on the Regimental authorities and represented through them the entire want of it at this station. I am at a loss to understand where the fault lies, knowing, as I do, that His Excellency the Commander-in-Chief sanctioned, recommended, and urged the erection and completion of Fives Courts, Racket Courts, Skittle Alleys, &c. I regret, however, to record the fact, that though three years have elapsed since His Excellency's visit to this place, only one Skittle Alley has been completed, and that only very recently, through the influence of Major General Coffin. There are now in progress a Skittle Alley, Fives Courts, and no other means of amusement has yet been provided by the proper authorities. I strenuously urged on the Officer Commanding the erection of a pandal to cover a piece of ground, and took the liberty of suggesting the appropriation of the Canteen Fund for this purpose. My views were not entertained, and nothing was done; surely no more legitimate mode of using this fund could be thought of. Might I be permitted to propose for consideration, that if instead of as now limiting the amount which may be held in the hand of the Regi-

ental authorities to a certain sum, after which it lapses to › Government, a rule might be made fixing the minim, and the surplus disposed of quarterly by a Committee nposed of the Officer Commanding, the Surgeon, Senior ptains, and Quarter Master, to provide healthy means of usement and recreation for the men.

In so far as I have been permitted to remark, I have reatedly and earnestly brought under notice the great want cleanliness in and about this station, and the disregard of en common decency among the natives. I have proposed medies and strongly represented the dangerous effects iich might result from the state of certain localities, and inted out means as simple as inexpensive, but without single encouraging or beneficial result.

And last, notwithstanding the melancholy repeatedly reesented and palpable evils which result from the want of ygienic or Police control over the recognized prostitutes, iere the evil is clearly on the increase, it is a matter of e greatest importance.

I strongly recommend to the authorities the establishent of an aërating machine for manufacturing aërated inks for Europeans at all stations. I know from personal servation, that it would be a source of considerable emoluent to Government, while it would provide the soldiers th a good wholesome and agreeable drink, at a moderate te, keep him out of the bazaar, and create such a fund as uld enable the Government to supply the troops with ılt at a very reduced rate, and thus do away with the conmption of ardent spirits to a considerable extent, and I ink entirely prevent men from resorting to the poisonous coctions now sold to them under various appellations in e bazaar.

With reference to clothing for the men, I beg permission offer my opinion that whatever the color may be for the ldiers' coats, the materials ought to be of woollen, and such a texture and color as will preclude the necessity r washing. The present material when washed and iffened is both unyielding and heavy, besides frequent ashings wear it out, and soldiers are very apt to put on the cket damp. They were all much delighted with the Red rge Jacket; it certainly looked neater, and seemed to fit eir figure and looked smarter.

From the Quarterly Return, April 1st to 30th June 1860.

Heat Apoplexy—by Assistant Surgeon Chester.—Some fatal cases of Heat Apoplexy occurred, but notwithstanding the severity of the season, only three were fatal. During the same period last year there were eight. In nearly every case which I have witnessed, the attack has been preceded by Fever, and the great predisposing cause seems to be nervous depression and debility, however arising. On this account too much care cannot be taken in arranging drills, which cause much fatigue during the hot season. Acting on this idea, several who suffered from Fever were placed on the convalescent list, as any exertion resulting in more than ordinary fatigue invariably brought on a relapse.

The description of Heat Apoplexy that best describes what I myself have witnessed is by Deputy Inspector-General Longmore, in the Indian Annals of Medical Science. He there mentions the preceding Fever, and considers it remittent; but although, without doubt, Heat Apoplexy is liable to supervene if the Fever be neglected, some of the cases which recovered and which he considered Heat Apoplexy, appear to me very like severe cases of Fever, and if they are to be considered Heat Apoplexy, many returned as Fever from this Regiment should be considered as recovered cases of Heat Apoplexy. Heat Apoplexy, as I understand it, very seldom recovers, the engorgement once having taken place, the patient's chance of life is very slight.

Annual Report for 1860.

Diet.—During about half of each year, there is a tolerable supply of country vegetables, and generally of good wholesome potatoes, but during the hottest and driest periods of the year there are scarcely any procurable; while this lasts, the only real variety offered is the change between mutton and beef, the contractor engaging to furnish the former twice a week. This he failed to do for a considerable period, a fact I first urgently represented verbally and afterwards in writing, but with no useful result; the letter was returned by the Adjutant by order of the Commanding Officer, with reply to the effect that it was a frivolous and vexatious complaint. There cannot be a doubt that under any circumstance, I should have neglected my duty had I failed to act as I did, but in this instance I will go further, and state my confirmed impression that had the terms of

the contract been strictly enforced, mutton might have been procured; nay, more, for my own consumption I procured mutton at a moderate rate. The contract rate was reduced last year, which, of course, induced the butcher to spend as little as he possibly could, and my experience has always been that when contract rates are not very remunerative in such a country as India, where frequently men of very small capital obtain contracts, the result is that the soldiers suffer, as the native will not lose if by any measure, however complicated, he can avoid it, irrespective of ultimate consequences; whereas, when the contractor finds it remunerative, he is anxious to retain it and establish a character. Be that as it may, the result of my simple performance of my strict duty on this occasion has proved most unpleasant to me. My Commanding Officer taking offence at the fact above-named being entered in my sanitary report under the head diet, sent for me to the orderly room and desired me to withdraw or expunge it. I of course respectfully declined, and wished to point out to him in the instructions forwarded to me in the usual official form as well for his guidance as mine, the absolute necessity for recording the fact. He refused either to look or to listen. But as this matter has been prominently brought to notice, I must indeed have little doubt it will shortly be finally decided, though to my comprehension nothing can be clearer than the instructions contained in Medical Regulations, page 77, para. 1, page 80, para. 21, page 82, para. 27, and lastly, at page 107, under the head of Instruetions to Medical Officers in making up annual reports.

Climate.—The dry persistent heat of Bellary has a decided and marked effect both on the circulation and respiration, and I am confidently of opinion, cannot but have an injurious effect on the European constitution, which, though it may not produce immediate noticeable results to any save an acute observer, will ultimately display itself to the detriment of the health of the men generally, and render it advisable that they should not be so long exposed to its influence, and when observed be sent to a station, the temperature of which is more moderate.

Special Remarks.—One very remarkable case of Hepatitis occurred in the person of a soldier named Robert Conwy, a tailor by trade, a very free liver and a very violent tempered man. He had been frequently treated in

Hospital for various complaints, but generally suffered from congestion of the liver with torpidity of that organ, was usually relieved by an emetic purgative, or when more severe, a few leeches. In January 1860 he was admitted with a decided attack of acute Hepatitis in a violent form. He was energetically treated with Calomel, Tart. of Ant., Saline purgatives, leeches freely applied, and occasionally an Anodyne at bed time, with farinaceous diet, the more violent symptoms were thus subdued, but after no very long period unmistakeable indications of the formation of a deep-seated hepatic abscess displayed themselves. He became restless, and the pulse rose to 120, countenance anxious, skin cold and clammy, bowels costive, and no appetite; then succeeded tension of the abdomen, partly from flatus, but principally from increased volume of the liver, and great oppression in breathing, dyspnœa. Anodynes and hot cataplasms gave partial relief for a time. For a time the most careful examination could detect no symptom of pointing, though the diffuse swelling was very perceptible. On the 6th of January the breathing became so difficult, and the danger of suffocation so imminent, that I determined to puncture. I did so between the 6th and 7th ribs, and evacuated about four pounds of purulent matter with great and instant relief. The symptoms were favorable, the patient improving and regaining strength (quantities of pus being evacuated through a catheter daily) for five or six days, when a recurrence of the bad symptoms set in. Judging from the constitutional symptoms as well as the elastic feel of the side, I suspected a second abscess had formed. I inserted a catheter (No. 2), it penetrated easily, and a large quantity of pus came away. From this time he improved, his recovery being very much retarded by his violent temper. The external wound healed up after about 22 lbs. of pus had been evacuated; he was sent to the Ramandroog, and eventually recovered completely. This is the fourth instance in which I have been successful. This man afterwards at some highland games won a race.

I wish very much to have continued my extracts from the records kept at Bellary, but find that time will not permit me. My reports are, however, at all times available for reference at the different places where such records are retained, and will substantiate and corroborate all the conclusions at which I have arrived, bearing on the sanitary history of the 74th Highlanders while quartered at Bellary.

Memorandum.

	Jackatalla.								Bellary.							
	March to December 1854.		January to December 1855.		January to December 1856.		January to July 1857.		August to December 1857.		January to December 1858.		January to December 1859.		January to March 1860.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Fevers..................	18	2	50	1	24	2	9	1	30	0	52	0	208	1	9	0
Stomach and Bowel Complaints......	112	10	92	10	87	5	30	2	14	0	130	7	176	8	17	0
Liver Complaints......	8	4	33	7	29	0	10	2	1	1	23	6	49	1	8	1
Venereal Complaints.	84	0	34	0	66	0	45	0	14	0	182	0	310	0	53	0
Total...	322	16	209	18	206	7	94	5	59	1	387	13	743	10	87	1
Strength...	586½		552¼		425½		411¼		215¾		555½		931¼		804¾	

Regiment arrived at Jackatalla in March 1854.	*Regiment arrived at Bellary in August* 1857.
DEATHS.	DEATHS.
1 Apoplexy in April 1854.	1. Apoplexy in April 1858.
	1 do in do. 1859.
	4 do in May ,,
	2 do in June ,,
	1 do in Sept. ,,
	1 Coup de soleil in Oct. ,,

Page 30.

4. Name the Station at which the Troops were before coming to the present station, the length of time they were in their former station, and the date of leaving it, their state of health there, and the diseases from which they chiefly suffered, their state of health on arriving at their present station, and the date of arrival, and the diseases from which they have chiefly suffered since arriving.

State whether any portion of the men's accommodation in your present Station is more unhealthy than the rest, if so, state to what such greater unhealthiness is attributable.

Head Quarters at Jackatalla arrived in March 1854, left in July 1857.

1st,—Left three Companies at Trichinopoly, those joined Head Quarters in March 1855, five Companies left for Cannanore in February 1855.

Subsequently 100 men left for active service in March 1856.

Head Quarters left Jackatalla in July 1857, part reached Bellary by transit in August 1857, two Companies left for the Field, one in August, one in September 1857, three Companies left for Dharwar in March 1858, Cannanore Wing joined in February 1858.

The annexed table will shew clearly at a glance and better than any verbal description, the health of the Head Quarters, by which it is apparent on arrival, Fevers, Bowel complaints, and Venereal were the prevailing diseases. As the stay of the troops on the Hills became prolonged, all the diseases rapidly diminished in number, the Bowel complaints became milder in type and more controllable, and the Fevers almost disappeared save in the cases of recruits and new arrivals from the plains.

There was not a man under treatment when the Head Quarters reached this station, and on the march only two were treated, one an old chronic case of Bowel complaint, the other of Cholera. Since that period Fevers, Bowel complaints, Liver and Venereal have been the prevalent diseases; the Fevers, a seasonal local epidemic, sharp in attack, but of a short duration and very controllable. To admit of any

satisfactory deduction, it is necessary to remark that as large Detachments from time to time left for the Field, all the most active and robust men were chosen by the Medical Officer in charge, the weak and sickly retained, so that ultimately Head Quarters became naturally a General Hospital for the Regiment.

Up to this period eleven fatal cases have occurred either from the disease variously styled Heat Apoplexy, Insolation or Coup de soleil.

The accommodation for the bachelors is all of the same description in blocks, overlapping each other in eschelon. The Non-Commissioned officers and married men are in small separate rooms at either end; there is no surface ventilation save when the doors are open, they are very narrow, have no windows, stone floors, and have neither proper lavatories nor cooking places attached.

Page 31.
6. State whether you have been in charge of troops at Hill stations, if so, name the hill station and state generally the result of your experience of residence at hill stations on the health of the troops.

I practised amongst European Officers and their families for six months at Kussowlie on the Himalayan range, at Murree on the Cashmere range, for nearly a year in charge of a sanitary depôt which I formed there, and in medical charge of the 74th Highlanders for three years on the Neilgherries. At Kussowlie all were more or less Invalids on arrival and benefited by the climate; and many entirely recovered, and not one death occurred during my time, the number I must add was limited, probably, 60 or 70 Europeans.

At Murree, the soldiers who came under my charge were for the most part mise rable, emaciated and debilitated, they came chiefly from Peshawur, and had suffered either from intermittent or remittent Fevers, Liver, or Bowel complaints, or were all more or less suffering from functional debility of one or more organs; besides those there were some thirty or forty families to the best of my recollection. I have no means of reference by me. Only one casualty occurred, from Phthisis, I think, I am certain not more than two. All improved, and there were no diseases I could fairly attribute to climate or locality.

My next experience of a hill station was on the Neilgherries, in Medical charge of the 74th Highlanders. The table annexed to question No. 4 exhibits the result. The state of

affairs was affected by the following very prominent features, namely, the majority of the men had been long in the Field, in Africa, often on different rations, and then had a long sea voyage on salt provisions. 2nd,—Many of them had volunteered from other Regiments and been long resident on the plains. 3rd,—They had a long march, and were sent into low, thatched, badly ventilated Barracks, with mud floors scraped out of the face of a hill rising up many feet behind them.

7. Have you observed whether troops who have been resident for some time on hill stations are more or less liable to attacks of febrile or other diseases on returning to the plains, and will you state the circumstances which in your opinion have influenced such greater or less liability.

7. All my observations and experiences have led me to the confirmed conclusion, that, as a general rule, hill stations, if 4,000 feet above the sea level, are most congenial to the health of Europeans, most beneficial to Invalids, and that on being again called to serve in the plains, they have improved constitutional powers to resist Fevers and other diseases, and are capable of more fatigue and exertion than troops long resident on the plains. This result is brought about, in my opinion—1st, by the mildness and congeniality of the climate; 2ndly, by the fact that the men *can take* plenty of exercise in the open air, which induces a vigorous frame, healthy appetite, and sound sleep, while on the other hand in plains, men for a great part of the year are much confined to the house, suffer from heat and thirst, do not take exercise, drink a great deal, and consequently do not sleep well, and have not vigorous digestion or good a ppetite.

8. From your experience do you approve or disapprove of selecting hill stations for troops.

8. I approve of hill stations in the very highest degree.

Page 32.

9. Are there any diseases peculiar to hill stations with which troops are liable to be attacked on going to them.

9. Yes, principally Liver and Bowel complaints, and men with functional diseases of important organs, those being in an inert torpid weakened condition are likely to be called into active force and serious attacks to result.

10. Are there any precautions as to diet, clothing, shelter, duties or exercises, which would guard the men from such attacks and enable them to obtain greater benefit from residence in hill stations.

10. Every one of the points named in this question are of the most vital importance and call for the gravest consideration.

1*st.*—*Clothing.* Every soldier ought, at the conclusion of his first day's march up the hills, to be furnished with a complete suit of flannels and woollen clothing.

2*nd.*—One of the greatest advantages of a hill climate is nullified, unless a man has a warm, well ventilated dry room, with at least 1,500 or 2,000 cubic feet of air. In my opinion the majority of the Bowel complaints result from badly ventilated confined damp rooms, with either stone, or still worse, clay floors; every room ought to have wooden flooring. It is very bad to have houses built on the face of high hills, the pressure of the building and the gravitation of the water from above, causes damp to arise both in the forms of moisture and vapour.

11. From your own experience, what seasons are best adapted for residence in hill stations? And what is the shortest period of residence which would enable troops to obtain the full benefit of such residence to their health.

11. It is a most difficult question to answer satisfactorily and concisely, but to the best of my judgment, as a general rule for all visitors, the latter part of the so-called cold season in the plains would be the best for reaching the hills, because it strikes a balance both ways, and makes the transition less sudden and the change more gradual; but there are many different circumstances which tend to modify opinion on this head, the present state of health of the men, length of time they had served in India, and the height of the station they were destined for. I am of opinion that to derive full benefit from a hill station, residence of, at least, two years is necessary.

Page 33.

12. Is there any period of residence beyond which injury is likely to be inflicted on the health of the troops on returning to service in the plains.

12. From experience and observation, I am of opinion, that taking into consideration the usual wear and tear of human life and its ordinary diseases, there is no climate I know more conducive to robust health than hill stations such as the Neilgherries. As a case in point, number of Invalids and Pensioners, both men and Officers who have been obliged to relinquish active employment from inability to endure the climate of the plains, settle on the hills, recover health, strength, and vigour, live to a good old age, and I am, therefore, of opinion that in an abstract point of view,

the longer a man resides on the hills, of course taking age into consideration, the greater his power of resistance to the climate of the plains when called on to serve. There are, I am aware, special cases where this would not hold good, but so few, that the exceptions only go to prove the rule.

13. Are any and what special precautions required for protecting the health of the troops on leaving hill stations for the plains.

13. That depends very much on the season of the year, and the nature of the country at the foot of the hill, but in my opinion, it is a wise and good precaution to give every man a little Quinine each morning before marching for the first eight or ten days.

Immediately men reach the plains, they ought to be provided with suitable clothing according to the nature of the climate and season of the year. Where the jungle is dense and extensive, men ought not, if possible to avoid it, either sleep in it or march through it, but be sent right through either in transits or on elephants, or still better, by railways. The water at the foot of the hills, as a rule, is often bad, that in the adjacent jungles always, therefore water ought to accompany men till they get through the latter. No soldier ought ever to sleep on the bare ground, when it is possible to avoid it; they are not only liable to contract Bowel complaints, but also to surface evaporation and malarious influences, not to mention the used up air of each other's lungs and evaporation from each other's bodies. Any space below them, however small, causes a current, and raises the foul air above the breathing apparatus.

To ensure the greatest amount of benefit to the individual and satisfaction to Government, I consider it most necessary and desirable, that where circumstances and nature of country would admit, as Mysore for instance, close to the Neilgherries, a permanent hospital should be established under the charge of an experienced Medical Officer, where men could be taken charge of either going to or returning from hill stations when deemed expedient, and that to this end when bodies of troops are ordered either up or down, they may be first carefully examined by such Medical officers in conjunction with the Regimental Medical officers. The Staff Medical officer on the hills and the one at Mysore could assist each other, and many untoward mistakes be avoided.

14. As a general rule, and provided there were no Military or other reasons against it, would it or would it not be the course most conducive to the preservation of the health of troops serving in India, to locate them on hill stations with short periods of service in the plains? or does your own experience lead you to consider that service in the plains, with short periods of changes to hill stations, would or would not be equally conducive to the health of the troops?

14. Having enjoyed varied and considerable opportunities of witnessing the effects of both experiments, I have not a moment's hesitation in saying, have as many European toops as it is possible to spare located on the hills, and for as long periods as the requirements of the Service will admit; they will always be found as a rule fit for service any where when called on. When I state this I mean not placed 2,000 or 3,000 feet, but not under 4,000.

Page. 38.

24. What time of the year do you think it desirable that Invalids should leave India for Home.

This question cannot be clearly answered; but, as a rule, I think the best is, that Invalids shall not be moved till arrangments have been definitely setted for their embarkation, (as remaining long at sea-port towns is productive of the greatest injury both to the individual and the service,) where the distance, mode of travelling, and nature of the climate will permit. I think the months of January and February the best for embarking troops going Home round the Cape.

Diseases.

1. Are there regular Inspection Parades for the discovery of incipient diseases at your station, and at what time.

There are regular health inspections every Saturday afternoon in the 74th, and for those on guard or duty on that day or the following Monday. Under any unusual circumstances, there are special inspections when deemed requisite.

(Signed) J. MACBETH, M.D.,
Surgeon, H. M.'s 74th Highlangers.

BELLARY, 11*th April* 1860.

A.

***Return of Sick and Wounded of the 74th Highlanders, from January* 1854 *to* 31*st December* 1863.**

Class	Order	Disease	Remained.	Admitted during the above period.	Total treated.	Discharged during the above period.	Died do. do.	Remaining.	Diseases of men discharged from the service on account of disease.	Diseases of men invalided from the service.	Foreign stations for change of climate in the same period.
CLASS I.—ZYMOTIC DISEASES.	ORDER 1. Miasmatic Diseases.	Variola	...	2	2	2	...	...	...	...	...
		Varicella	...	6	6	6	...	...	...	...	...
		Morbili	...	2	2	2	...	...	...	...	...
		Tonsillitis	...	105	105	105	...	...	...	...	...
		Parotitis	...	2	2	2	...	...	...	...	...
		Cynanche Trachealis	...	...	...	...	...	...	...	...	...
		Pertussis	...	...	...	...	...	...	...	...	...
		Febris Typhoides	...	2	2	2	...	...	...	...	...
		Febris Typhus	...	3	3	...	3	...	...	...	...
		Febris Intermittens	...	586	586	582	1	3	...	...	5
		Febris Remittens	...	235	235	232	3	...	...	...	...
		Febris Continua	...	567	567	557	10	...	...	...	1
		Ophthalmia	...	419	419	418	...	1	2	3	1
		Erysipelas	...	13	13	13	...	...	...	...	...
		Erythema	...	2	2	2	...	...	...	...	...
		Anthrax	...	6	6	6	...	...	...	...	...
		Furunculus	...	4	4	4	...	...	...	...	...

CLASS I.—ZYMOTIC DISEASES.	ORDER 1. Miasmatic Diseases.	Dysenteria	...	599	599	547	51	1	15	3	23
		Diarrhœa	...	787	787	776	1		6	1	14
		Cholera Biliosa	...	3	3	3			...	...	...
		Cholera Spasmodica	...	121	121	59	62		...	...	...
		Rheumatismus	...	545	546	544		2	9	6	14
	ORDER 2. Enthetic Diseases.	Syphilis Primaria	...	755	755	752		3	1	...	2
		Syphilis Secundaria	...	187	187	185	1		6	6	14
		Iritis Syphilitica	...	1	1	1			1	...	1
		Gonorrhœa	...	597	597	595		2	...	...	...
		Phymosis et Paraphymosis	...	7	7	7			...	...	...
		Bubo	...	507	507	502		5	...	...	...
		Orchitis	...	155	155	155			...	...	...
		Strictura Urethræ	...	29	29	29			...	...	1
		Lepra	...	1	1	1			...	...	...
	ORDER 3. Dietic Diseases.	Purpura	...	2	2	2			...	...	...
		Ebriositas	...	124	124	122	1	1	...	...	...
	ORDER 4. Parasitic Diseases.	Porrigo	...	1	1	1			...	...	...
		Scabies	...	89	89	89			...	...	...
		Vermes b. Tænia Solium	...	21	21	21			...	...	...
		Do. d. Ascaris Lumbricoides	...	1	1	1			...	...	...
		Do. f. Dracunculus	...	58	58	58			...	...	...
CLASS II.—CONSTITUTIONAL DISEASES.	ORDER 1. Diathetic Diseases.	Podagra	...	8	8	8			...	...	...
		Anæmia	...	15	15	15			27	9	20
		Anasarca	...	12	12	10	2		...	..	...
		Scirrhoma	...	1	1	1			...	...	...
		Lupus	...	2	2	2			...	...	...
	ORDER 2. Tubercular Diseases.	Scrofula	...	71	71	71			17	10	17
		Phthisis Pulmonalis	...	48	48	35	9	4	5	4	6
		Hæmoptysis	...	18	18	15	2		1	...	1

Return of Sick and Wounded of the 74th Highlanders, from January 1854 *to* 31*st December* 1863.—*(Continued.)*

			Remained.	Admitted during the above period.	Total treated.	Discharged during the above period.	Died do. do.	Remaining.	Diseases of men discharged from the service on account of disease.	Diseases of men invalided from the service.	Foreign stations for change of climate in the same period.
CLASS III.—Local Diseases.	Order 1. Diseases of the Nervous System.	Encephalitis	...	1	1	...	1	...	...	...	...
		Apoplexia	...	23	23	1	22	...	...	...	...
		Paralysis	...	31	31	26	5	...	3	2	3
		Delirium Tremens	...	32	32	26	6	...	...	...	...
		Mania	...	6	6	6	..	...	1	1	2
		Monomania	...	13	13	13	..	...	...	1	1
		Dementia	...	8	8	8	...	...	3	3	1
		Epilepsia	...	17	17	17	...	...	2	2	2
		Hysteria	...	4	4	4	..	...	...	...	...
		Cephalæa	...	130	130	130	...	..	...	...	7
		Neuralgia	...	9	9	9	...	...	...	..	...
		Cœcitas	...	...	...	...	...	...	2	...	2
		Otitis	...	55	55	55	...	...	...	...	...
		Dysecœa	...	2	2	2	...	...	...	...	...
	Order 2. Diseases of the Circulatory System.	Carditis	...	52	52	45	7	...	3	3	6
		Pericarditis	...	9	9	7	2	...	...	...	..
		Morbus Val. Cordis	...	46	46	43	1	2	6	3	7

CLASS III.—LOCAL DISEASES.	ORDER 2. Diseases of the Circulatory System.	Aneurisma	...	12	12	10	1	1	1	1	1
		Angina Pectoris	...	1	1	1	...	...	...	...	...
		Syncope	...	1	1	1	...	...	...	...	...
		Phlebitis	...	1	1	1	...	...	...	...	...
		Varix	..	5	5	5	..	...	1	2	1
	ORDER 3. Diseases of the Respiratory System.	Laryngitis	...	1	1	1	...	...	..	...	...
		Bronchitis	...	550	550	542	6	2	8	6	10
		Pleuritis	...	11	11	11	...	...	..	...	...
		Pneumonia	...	28	28	24	4	...	..	...	1
		Asthma	...	21	21	21	...	...	2	1	3
		Emphysema	...	1	1	1	...	...	...	..	...
	ORDER 4. Diseases of the Digestive System.	Gastritis	...	8	8	8	...	...	...	...	...
		Enteritis	...	9	9	7	2	...	...	...	...
		Obstipatio	...	98	98	98	...	...	...	1	...
		Hernia	...	15	15	15	...	...	..	1	1
		Dyspepsia	...	491	491	490	1	...	6	2	12
		Colica	...	42	42	42	...	...	...	...	...
		Hæmatemesis	...	1	1	1	...	...	...	..	...
		Hæmorrhois	...	108	108	108	...	...	...	...	1
		Fistula-in-ano	...	3	3	3	...	...	1	...	1
		Splenitis	...	34	34	34	...	...	..	...	...
		Hepatitis	...	440	440	409	29	2	15	3	22
		Icterus	...	36	36	33	3	...	...	...	...
		Ascites	...	2	2	1	1	...	...	...	...
	ORDER 5. Diseases of the Urinary System.	Nephritis	...	14	14	14	...	...	...	...	...
		Ischuria	...	10	10	10	...	...	...	...	...
		Nephria	...	4	4	3	...	...	...	...	...
		Diabetes	...	4	4	4	...	..	...	...	2
		Calculus Vesicæ	...	1	1	1	...	...	...	...	...
		Hæmaturia	...	2	2	2	...	...	...	...	..
		Cystitis	...	4	4	3	1	...	...	...	...

Return of Sick and Wounded of the 74th Highlanders, from January 1854 to 31st December 1863.—(Continued.)

Class	Order	Disease	Remained.	Admitted during the above period.	Total treated.	Discharged during the above period.	Died do. do.	Remaining.	Diseases of men discharged from the service on account of disease.	Diseases of men for discharge. Invalided from the service.	Foreign stations for change of climate in the same period.
CLASS III.—LOCAL DISEASES.	ORDER 6. Diseases of the Generative System	Varicocele	...	1	1	1	...	...	...	...	...
		Orchitis	...	37	37	37	...	...	...	...	...
		Hydrocele	...	14	14	14	...	...	...	1	...
		Bubo, N. S.	...	15	15	15	...	...	...	...	...
	ORDER 7. Diseases of the Locomotive System.	Arthritis	...	3	3	3	...	...	...	...	...
		Synovitis	...	5	5	5	...	...	...	...	...
		Hydrarthrus	...	2	2	2	...	..	...	...	...
		Contractura	...	5	5	5	...	...	1	1	1
		Ostitis (includiug Periostitis.)	...	2	2	2	...	...	...	...	...
		Necrosis	...	5	5	5	...	...	...	...	...
	ORDER 8. Diseases of the Integumentary System.	Urticaria	...	2	2	2	...	..	...	...	...
		Eczema	...	14	14	14	...	...	...	...	...
		Herpes	...	32	32	32	...	...	..	...	...
		Pemphigus	...	1	1	1	...	...	...	...	...
		Psoriasis	...	4	4	4	...	...	...	...	...
		Phlegmon	...	389	389	388	...	1	1	1	...
		Paronychia	...	34	34	34	...	...	...	...	...
		Abscessus	...	8	8	8	...	...	...	...	...
		Ulcus	...	353	353	350	...	3	5	3	4

CLASS IV.—DEVELOPMENTAL DISEASES.	ORDER 4. Diseases of Nutrition.	Atrophia. Asthenia	...	55	55	54	1	...	3	2	5
CLASS V. VIOLENT DEATHS OR DISEASES.	ORDER 1. Accident.	Ambustio	...	9	9	9	...	...	...	...	...
		Explosio	...	3	3	3	...	...	...	..	...
		Insolatio	...	10	10	8	2	...	1	...	1
		Luxatura	...	30	30	30	...	...	...	...	...
		Subluxatio	..	187	187	186	...	1	1	...	1
		Fractura	...	56	56	55	1	...	...	1	...
		Contusio	...	272	272	272	...	...	...	...	...
		Vulnus Sclopetarium	...	4	4	4	...	...	...	..	...
		Vulnus Incisum	...	74	74	72	2	...	...	..	...
		Morsus Scorp.	...	1	1	1	...	...	...	...	..
		Venenatio	...	1	1	1	...	...	...	...	..
		Vesiculæ pedis	...	1	1	1	...	...	...	...	...
	ORDER 6. Other Diseases, &c.	Punitus	...	17	17	17	...	...	...	...	...
		Amputatio	...	9	9	9	...	...	1	1	...
		Tumores	...	33	33	33	...	...	1	1	1
		Not diagnosed	...	399	399	399	..	...	1	1	...
		Worn out	...	...	...	..	...	...	196	147	57
		Total	...	11,203	11,203	10,912	255	36	355	232	278

B.

Yearly Abstract.

Years.	Strength on the 1st of January.	Admitted during the year.	Died.		Remaining on the 31st Dec. 1863.	Percentage of sick to strength.	Percentage of deaths to sick.	Percentage of deaths to strength.	Barracks at which quartered.
			In Hospital.	Out of Hospital.					
1854	779	1,154	57	3	...	148·13	4·93	7·70	On first arrival badly quartered, Cholera having broke out in the Detachments & a severe form of Dysentery at Jackatallah.
1855	856	1,047	34	3	38	122·31	3·24	4·32	
1856	952	1,082	18	...	45	113·66	1·66	1·89	
1857	947	998	14	3	50	105·37	1·40	1·79	
1858	1,047	1,427	32	1	57	132·28	2·24	3·14	
1859	995	1,479	35	1	42	148·64	2·36	3·61	
1860	982	938	13	...	57	95·52	1·38	1·32	
1861	927	1,276	10	2	51	137·64	0·78	1·29	
1862	739	1,165	32	2	39	157·64	2·74	4·60	
1863	707	637	10	5	36	90·9	1·57	2·12	
Total...	89,031	11,203	255	20	415	1,251·28	22·30	31·78	
		1120·3	25·5	2·	41·1	125·128	2·23	3·178	

D.

Return of Women, from 1*st January* 1854 *to* 31*st Dec.* 1863.

STRENGTH 97.

DISEASES.	Remained.	Admitted.	Total treated.	Discharged.	Died.	Remaining.
Variola	...	2	2	1	1	...
Morbilli	...	3	3	3	...	...
Tonsillitis	...	5	5	5	...	...
Pertussis	...	1	1	1	...	...
Febris Typhus ...	...	2	2	1	1	...
Febris Intermittens ...	...	89	89	88	1	...
Febris Remittens ...	...	16	16	16	...	...
Febris Continua	...	78	78	77	1	...
Ophthalmia	...	101	101	101	...	...
Metria	...	1	1	...	1	...
Furunculus	...	2	2	2	...	...
Influenza	...	2	2	2	...	...
Dysenteria	...	27	27	19	8	...
Diarrhœa	...	66	66	64	2	...
Cholera Spas... ...	...	12	12	7	5	...
Rheumatism	...	15	15	15	...	...
Syphilis Prim ...	...	1	1	1	...	...
Syphilis Secund	...	4	4	4	...	...
Gonorrhœa	...	1	1	1	...	...
Scabies	...	3	3	3	...	...
Vermes b. Tænia Solium..	...	3	3	3	...	...
Anæmia	...	10	10	10	...	...
Scrofula	...	3	3	3	...	...
Phthisis Pul	...	1	1	...	1	...
Meningitis	...	1	1	1	...	...
Delirium Tremens ...	...	2	2	1	1	...
Epilepsia	...	2	2	2	...	...
Hysteria	...	2	2	2	...	...
Cephalæa	...	22	22	22	...	...
Otitis	...	2	2	2	...	...
Epistaxis	...	1	1	1	...	...
Asthma	...	4	4	4	...	...
Obstipatio	...	51	51	51	...	...
Dyspepsia...	...	164	164	164	...	...
Colica	...	20	20	20	...	...

rn of Women, from 1*st January* 1854 *to* 31*st December* 1863.—*(Continued.)*

STRENGTH 97.

DISEASES.	Remained.	Admitted.	Total treated.	Discharged.	Died.	Remaining.
Hæmorrhois	...	3	3	3	...	...
Splenitis	...	1	1	1	...	...
Hepatitis	...	18	18	15	3	...
Icterus	...	2	2	2	...	...
Hysteritis...	...	4	4	3	1	...
Tumor Ovarii ...	...	1	1	1	...	...
Ostitis	...	2	2	2	...	...
Psoriasis	...	1	1	1	...	...
Phlegmon	...	18	18	18	...	...
Paronychia	...	1	1	1	...	...
Abscessus	...	2	2	2	...	...
Ulcus...	...	10	10	10	...	...
Partus	...	308	308	304	4	...
Abortus	...	12	12	12	...	...
Paramenia	...	4	4	4	...	...
Amenorrhœa ...	...	...	...	...	...	...
Dysmenorrhœa	...	2	2	2	...	...
Leucorrhœa	...	4	4	4	...	...
Atrophia	...	65	65	65	...	...
Ambustio	...	1	1	1	...	...
Luxatura	...	1	1	1	...	...
Subluxatio	...	5	5	5	...	...
Fractura	...	...	...	...	...	...
Vulnus Incis... ...	...	1	1	1	...	...
Gestatio	...	3	3	2	1	...
Phlegmania Dolens...	...	1	1	1	...	...
Prolapsus Uteri	...	3	3	3	...	...
Bronchitis	...	41	41	41	...	...
Not diagnosed	...	14	14	14	...	...
Total	...	1,247	1,247	1,216	31	..
Percentage of sick to strength, per annum ...	...	...	128·66	...	...	.
Percentage of deaths to sick treated	...	...	2·48	..	...	
Percentage of deaths to strength	...	...	3·19	...	...	

E.

eturn of Children from 1*st Jan.* 1854 *to* 31*st Dec.* 1863.

STRENGTH 200.

DISEASES.	Remained.	Admitted.	Total treated.	Discharged.	Died.	Remaining.
ola	...	8	8	7	1	...
cella	...	8	8	8	...	...
oilli	...	92	92	88	4	...
illitis	...	23	23	23	...	...
titis	...	18	18	18	...	...
ussis	...	4	4	3	...	...
Typhus ...	...	2	2	1	1	...
Intermittens ...	...	141	141	141	...	...
Remittens ...	...	14	14	11	3	...
Continua	...	134	134	127	7	...
halmia	...	505	505	505	...	...
ipelas...	...	1	1	...	1	...
nculus	...	1	1	1	...	...
nteria	...	53	53	29	24	...
rhœa	...	276	276	260	16	...
era Spas	...	25	25	3	22	...
imatism ...	...	3	3	3	...	...
orrhœa	...	4	4	4	...	...
thæ	...	1	1	1	...	...
ies	...	46	46	46	...	...
nea b. Tænia Solium	...	21	21	20	1	...
acunculus	...	3	3	3	...	...
mia	...	3	3	3	...	...
sarca	...	2	2	1	1	...
ula	...	6	6	3	3	...
rculosis Mesenterica	...	8	8	2	6	...
psia	...	1	1	1	...	...
ulsio	...	10	10	3	7	...
alsea	...	2	2	2	...	...
algia	...	2	2	2	...	...
s...	...	4	4	4	...	...
ohitis...	...	215	215	210	5	...
monia	...	3	3	2	1	...
nche-trachealis ...	...	3	3	2	1	...
itis	...	1	1	1	...	...
patio	...	21	21	21	...	...
ia	...	1	1	1	...	...
epsia...	...	45	45	45	...	...

Return of Children from 1*st Jan.* 1854 *to* 31*st December* 1863.—(*Continued.*)

STRENGTH 200.

DISEASES.	Remained.	Admitted.	Total treated.	Discharged.	Died.	Remaining.
Colica	...	5	5	5	...	...
Splenitis	...	2	2	2	...	...
Hepatitis	...	3	3	3	...	...
Icterus	...	7	7	6	1	...
Nephria	...	1	1	1	...	...
Contractura	...	2	2	2	...	...
Ostitis	...	1	1	1	...	...
Urticaria	...	1	1	1	...	...
Eczema	...	5	5	5	...	...
Herpes	...	4	4	4	...	...
Psoriasis	...	8	8	8	...	...
Phlegmon...	...	37	37	37	...	...
Paronychia	...	2	2	2	...	...
Ulcus	...	8	8	7	1	...
Prematurus Natus ...	...	1	1	...	1	...
Dentitio	...	65	65	52	13	...
Atrophia	...	20	20	14	6	...
Ambustio...	...	4	14	14	...	...
Explosio	...	1	1	1	...	...
Insolatio	...	1	1	...	1	...
Asphyxia	...	1	1	...	1	...
Luxatura	...	2	2	2	...	...
Subluxatio	...	8	8	8	...	...
Fractura	...	8	8	7	1	...
Contusio	...	22	22	22	...	...
Vulnus Incis	...	5	5	5	...	...
Hydrocephalus ...	...	11	11	3	8	...
Tumores	...	4	4	4	...	...
Vaccinia	...	15	15	15	...	...
Leucorrhœa	...	3	3	3	...	...
Total	...	1,987	1,987	1,849	138	...
Percentage of sick to strength, per annum....	...	...	99·35	...	...	...
Percentage of deaths to sick treated	...	...	6·94	...	...	...
Percentage of deaths to strength	...	...	6·90	...	...	...

H.

Number of Deaths from Zymotic Diseases at each of the above places and on the march.

Zymotic Diseases.	Jackatallah.	Trichinopoly.	Cannanore.	Malliapooram.	Calicut.	Bellary.	Ramandroog.	Dharwar.	Shorapore.	Nurgoond.	Hyderabad.	Poonamallee.	Depôts at Khandalla, Madras, and Arcot.	On the different marches.
Febris Typhus	1	...	...	...	...	2	...	...	...	...	...	...	...	...
Do. Intermittens	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Do. Remittens	...	...	...	...	...	...	...	1	...	...	...	...	1	...
Do. Continua	4	...	...	...	...	2	...	...	...	1	1	2	...	3
Dysenteria...	16	5	5	4	1	13	...	...	...	1	...	...	1	1
Diarrhœa	6	...	...	...	...	5	...	...	...	...	...	...	...	...
Cholera	...	3	...	...	...	24	2	...	...	...	...	...	4	29
Syphilis Secund	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Ebriositas	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Total...	28	8	5	4	1	47	3	1	...	2	1	2	6	33
Total deaths from all Diseases...	53	12	13	8	2	101	8	1	0	3	2	11	9	51
Percentage of deaths from Zymotic Diseases...	52·83	66·66	38·46	50·0	50·0	46·53	37·5	100·0	0·0	6·66	50·0	18·18	66·66	64·51

L.

Invalided at the undermentioned places with period of residence.

Years of residence.	Jackstalla.	Cannanore.	Bellary.
	Right Wing.	Left Wing.	The whole Regt.
Within the 1st year	11	14	46
Do. 2nd do.	19	26	57
Do. 3rd do.	15	13	50
Do. 4th do.	26	...	63
Do. 5th do.	At Bellary.	...	141
Do. 6th do.	Do.	...	29
Do. 7th do.	Do.	...	...
Do. 8th do.	Do.	...	...
Do. 9th do.	Do.	...	...
Do. 10th do.	Do.	...	...

R.

Recruits when joined—Age—Defects.

Dates Joined on.	Age.							Defects.																				
	Under 20 years.	20 to 25 years.	25 to 30 years.	30 to 35 years.	35 to 40 years.	40 and upwards.	Total.	Fracture.	Marks of Ulcers.	Deformities of toes, feet, elbows, &c.	Defective vision.	Marked with letter D.	Buboes.	Enlarged testis, Hernia, &c.	Curvature of Spine.	Varicose veins.	Idiocy.	Scrofula.	Tumors.	Paralytic.	Hæmorrhois.	Deafness.	Old age.	Narrow chest.	Marks of treatment.	Tumultuous action of Heart.	Under age.	Total.
22nd February 1856	9	5	2	3	0	0	19	1	1	6	3	1	2	3	1	0	1	0	0	0	0	0	0	0	0	0	0	19
26th March 1859	8	8	4	0	0	0	20	1	8	3	1	0	1	2	0	0	0	3	1	0	0	0	0	0	0	0	0	20
20th June 1859	10	6	0	0	0	0	16	0	3	4	1	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	11
3rd November 1860	91	28	13	2	2	0	136	1	27	11	0	5	6	6	1	0	0	5	1	0	1	4	2	3	5	1	0	79
4th February 1862	64	9	5	1	0	0	79	0	10	15	1	4	5	1	3	1	1	3	0	1	0	0	0	1	6	0	1	53
Total...	182	56	24	6	2	0	270	3	49	39	6	12	14	12	5	1	2	11	3	1	1	4	2	4	11	1	1	182

S.

Result of the above.

DATES JOINED.	Invalided.	Sent to Ramandroog.	Died.	Fit for duty.	STATIONS.
22nd February 1856	2	...	2	15	Jackatalla.
26th March 1859	1	2	...	17	Bellary.
20th June 1859	2	1	3	10	Do.
3rd November 1860	10	35	3	88	Do.
4th February 1862	16	29	3	31	Do.
Total...	31	67	11	161	

Y.

of Occurrences and Appendix, giving at a glance all the information contained in the Tables.

	Per annum		Per annum
ENTAGE OF SICK TO		On the different marches...	1·74
STRENGTH.		Cannanore ...	1·66
inopoly ...	194·85	Bellary ...	1·52
anore ...	181·72	Shorapore ...	1·53
war ...	156·52	Dharwar ...	0·54
oond ...	123·52	Calicut ...	0·49
indroog ...	114·3	INVALIDED PER CENT. TO	
pore ...	109·27	STRENGTH.	
ry ...	108·02	Bellary ...	7·38
iapooram ...	106·97	Cannanore ...	6·81
amallee ...	93·36	Jackatalla ...	4 29
rabad ...	92 67		
talla ...	77·32	PERCENTAGE OF DEATHS	
ut ...	70·93	FROM ZYMOTIC DISEASES.	
e different marches...	14·97	Dharwar ...	100·0
ts at Khandalla, Ma-		Trichinopoly ...	66 66
as, and Arcot ...	8·33	Depôts at Khandalla, Ma-	
ENTAGE OF DEATHS TO		dras, and Arcot ...	66·66
SICK.		On the different marches..	64·51
ts at Khandalla, Ma-		Jackatalla ...	52·83
as, and Arcot ...	30·0	Mulliapooram ...	50·0
e different marches ..	9·83	Calicut ...	50·0
oond ...	7·14	Hyderabad ...	50·0
talla ...	3·90	Bellary ...	46 53
amallee ...	3 55	Cannanore ...	38·46
indroog ...	2·83	Ramandroog ...	37·5
rabad ...	2·57	Poonamallee ...	18·18
iapooram ...	2·08	Nurgoond ...	6·66
ry ...	1·64	Shorapore ...	0·0
inopoly ...	1·62	PERCENTAGE OF SYPHILITIC	
apore ...	1·06	CASES TO STRENGTH.	
anore ...	0·92	Cannanore ...	37 32
ut ...	0·69	Bellary ...	22·53
war ...	0·34	Jackatalla ...	11 85
ENTAGE OF DEATHS TO		PERCENTAGE OF SYPHILITIC	
STRENGTH.		CASES TO TOTAL ADMISSIONS.	
goond ...	8·82	Bellary ...	20·69
amallee ...	3·66	Cannanore ...	20·53
androog ...	3 45	Jackatalla ...	15·32
atalla ...	3·20	DURATION OF THE DISEASE	
inopoly ...	3·16	AT EACH OF THE ABOVE	
ts at Khandalla, Ma-		STATIONS.	
s, and Arcot ...	2·50	Cannanore days	30·74
erabad ...	2·37	Jackatalla ...	25·2
iapooram ...	2·20	Bellary ...	24·9

Z.

Order of Occurrences and Appendix, &c.

	Per annum.
PERCENTAGE OF SICK TO STRENGTH.	
Detachment from Madras by Sea to Tranquebar and Trichinopoly	448·74
Head Quarters by do. to do.	370·97
Detachment from Bellary to Coopul and back ...	233·28
Two flank Companies from Trichinopoly to Jackatalla ...	2[illegible]5·34
Detachment from do. to do. ...	202·2
Left Wing from Jackatalla to Cannanore	175·43
The Hyderabad Detachment back to Bellary	124·06
Head Quarters from Trichinopoly to Jackatalla ...	103·43
Colonel Spottiswoode's flying Brigade from Bellary to Hyderabad	84·12
Left Wing from Cannanore to Bellary	66·99
Kurnool Movable Column	49·74
Detachment from Jackatalla to Bellary	48·0
Head Quarters from do. to do	13·79
Detachment from Cannanore to Mulliapooram... ..	0·0
„ against Moplahs	0·0
„ from Cannanore to Calicut	0·0
Captain Falconer's Detachment from Bellary to Dharwar ...	0·0
Detachment to Poonamallee	0·0
PERCENTAGE OF DEATHS TO SICK.	
Detachment from Trichinopoly to Jackatalla	39·13
„ „ Madras by Sea to Trichinopoly... ...	29·21
„ „ Bellary to Coopul...	7·14
Two flank Companies from Trichinopoly to Jackatalla ...	6·25
Head Quarters from Trichinopoly to Jackatalla... ...	4·54
Colonel Spottiswoode's flying Brigade from Bellary to Hyderabad	2·77
Kurnool Movable Column	2·26
Head Quarters by Sea to Trichinopoly	2·04
The Hyderabad Detachment back to Bellary	0·21
Detachment to Poonamallee	0·0
Left Wing from Jackatalla to Cannanore	0·0
Do. from Cannanore to Bellary...	0·0
Detachment from Cannanore to Mulliapooram	0·0
Do. do. do. to Calicut	0·0
Head Quarters from Jackatalla to Bellary	0·0
Captain Falconer's Detachment from Bellary to Dharwar...	0·0
Detachment from Jackatalla to Bellary	0·0
„ against Moplahs	0·0

Order of Occurrences and Appendix, &c.—Continued.

Percentage of Deaths to Strength.	Per annum.
)etachment from Madras by Sea to Tranquebar and Trichinopoly	131·09
Do. from do. to do	78·96
Do. against Moplahs	50·0
Do. from Cannanore to Mulliapooram	27·99
Do. do. Bellary to Coopul	16·66
'aptain Falconer's Detachment from Bellary to Dharwar ...	13·04
'wo flank Companies from Trichinopoly to Jackatalla ...	12·83
Iead Quarters from Madras by Sea to Tranquebar and Trichinopoly	7·57
)o. do. from Trichinopoly to Jackatalla	7·57
‚eft Wing from Jackatalla to Cannanore	7·01
Do. from Cannanore to Bellary	2 37
'olonel Spottiswoode's flying Brigade to Hyderabad ...	2 33
₍urnool Movable Column	1·12
'he Hyderabad Detachment back to Bellary	0·27
)etachment to Poonamallee	0·2
Do. from Cannanore to Calicut	0·0
Iead Quarters from Jackatalla to Bellary	0·0
)etachment from Jackatalla to Bellary	0·0

(Signed) J. MACBETH, M. D.,
Surgeon Major H. M. 74th Highlanders.

NOTE.—We have printed the foregoing report as an .teresting document containing the opinions of a Medical fficer of great experience in India, of the value of a Hill imate to European soldiers. The Report was accomanied by many more tables than we have been able to ake room for; we have, therefore, omitted those that ›peared to us scarcely necessary to thoroughly illustrate the 'guments adduced. But we here give the headings and ›me particulars of those tables which we have omitted.

.—Return of Officers, from January 1854 to December 31st, 1863. Strength, 56—81.
Total treated, 386. Discharged, 377. Died, 9.
Percentage of Deaths to Strength per annum, 3·35.

.—Return of men who remained all the time at Jackatalla and those who remained in the plains.

:.—Sickness and Mortality on the march of the various detachments, &c., of the Corps.

I.—Mortality according to Age in the Corps.

Under 20 years....11.		From 20 to 25...... 68.	
From 25 to 30....70.		„ 30 to 35.......60.	
„ 35 to 40....47.		„ 40 & upwards, 19.	

Total, 275.

J.—Mortality according to Service in the Corps.

K.—Diseases or Causes of Mortality in the Corps, according to service at the undermentioned places.

M.—Invalided at the undermentioned places, with length of service.

N.—Causes invalided from at the undermentioned places.

O.—A list of volunteers from other Corps, showing age, length of service, and date of arrival. Total, 294.

Under 30 years of age...97.	Above 30 years of age...197.
„ 10 do. service...81.	„ 10 „ service...213.

P.—Of the above, were invalids—120.

Under 35 years of age...15.	Above 35 years of age...105.
„ 10 „ service....12.	„ 10 „ service...108.

Q.—Deaths of the above occurred from the following diseases.

T.—Number married and unmarried.

	Average. strength.	Died.	Per cent. per annum.
Married..............	97	39	............4·628.
Unmarried..........	796	236	............2·964.

U.—Number of syphilitic cases, with periods and strength at the undermentioned places.

V.—Result of the above.

W.—Of the above were married and single, showing diminution or increase on long residence.

X.—Average number of days each patient admitted into Hospital (all diseases) had been under treatment at the undermentioned places—

	Days.
Jackatalla....................	11·08.
Cannanore.........	13·36.
Bellary................	18·56.

PART II.

REVIEWS AND NOTICES OF BOOKS.

A Hand-book of Uterine Therapeutics. By EDWARD JOHN TILT, M.D., Member of the Royal College of Physicians, &c. &c. Second Edition. London: JOHN CHURCHILL AND SONS. 1864. Foolscap, 8vo., pp. 318.

IN the seventh volume of this journal, we reviewed at some length the first edition of Dr. Tilt's Hand-book. We were somewhat amused to find that the concluding paragraph of that review,—one of the very few which are at all laudatory,—is printed at the end of the present edition among the "Opinions of the Press." A compliment of this kind to a Colonial Editor naturally caused a reference to the new edition of the work with a view to discovery of any emendations therein, and to observe whether any notice had been taken of previous censures.

This reference has proved that Dr. Tilt has shown marked respect to our strictures. He has left out the possession of "good looks" as essential to the success of an obstetrician; he has altogether omitted the very objectionable phrase "the occasional use of matrimony;" and he has so modified his account of Recamier's feat in Hysteria, as to allow it to be clearly understood who was cured by "the maid sitting on her mistress's belly."

There can be no doubt that this edition has undergone a careful revision, and with advantage. There are still some points upon which we would join issue with Dr. Tilt, but, upon the whole, we can recommend the book as containing, within moderate compass, a fair account of the therapeutic measures available in the treatment of uterine affections. There is a formulary at the end of the work to which the practitioner may refer with probable benefit. We fully agree with Dr. Tilt in his condemnation of unguents as generally prepared. Glycerine is a much more manageable and cleanly menstruum than hog's lard or oil, and Dr. Tilt gives several useful formulæ in which glycerine is substituted for fatty matters.

A Clinical Memoir on certain Diseases of the Eye and Ear, consequent on Inherited Syphilis; with an appended Chapter of Commentaries on the Transmission of Syphilis from Parent to Offspring, and its more remote Consequences. By JONATHAN HUTCHINSON, F.R.C.S., Senior Assistant Surgeon and Lecturer on Surgery at the London Hospital, &c. &c. London: John Churchill, 1863. 8vo. pp. 259.

MR. HUTCHINSON's name has for years been before the profession as one of its ablest practitioners, as a sound, practical Surgeon, and as an earnest worker in the field of pathological science. Anything emanating from such a man must command the greatest respect.

The receipt of the book with the title given above was announced in the number of this journal for February 1864, and had it not been for the illness and want of leisure of the late Editor which eventuated in a most unfortunate irregularity in the issue of the journal, a notice of the work would have appeared before this time.

It is somewhat late in the day to enter upon a review of a treatise published more than two years ago, which has now become a standard work, and which is most probably in the hands of many of our readers. We do not, therefore, purpose to enter upon any lengthened notice, but simply to give a short analysis of the contents, with a view of inducing those of our readers who have not hitherto done so to enter upon a study of the very important subject treated of in this work, which is most correctly entitled, and is a perfect model of, "a Clinical Memoir."

Those who habitually peruse the reports of the Pathological Society of London, published in the weekly medical journals, will remember that several communications were made by Mr. Hutchinson in 1857-8-9, upon the condition of the permanent upper central incisor teeth as among the most reliable indications of inherited syphilitic taint. And about the same time, the relation of inherited taint to diseases of the eye was studied by our author, and the correctness of his careful observations and cautiously propounded views was confirmed by the ablest ophthalmologists.

Hutchinson says in his preface :—

ıat ' Chronic Interstitial Keratitis' is essentially an heredito-tic disease, and that dental peculiarities, of a certain kind, are, ;autiously examined, a reliable indication of inherited taint, leed, the principal assertions met with in the following pages. ›oth should be received with incredulity by those who have d large opportunities for examining the facts, is what ought ly to be expected but strongly desired."

d he adds in a note :—

› any one inclined to test the correctness of these assertions, ld beg respectfully to insist on the necessity for great cau-ıd attention to detail. In many cases with which I have been ıcquainted, and which have been believed to be exceptional to :ws, mistakes have been made as to the character of the dental mations, the set of teeth affected, or the special form of ılmia. I cannot too strongly urge that I am in no way responsi- diagnostic errors consequent upon inattention to my descrip- I should not make this remark, were it not that the subject is great importance, and that I am very desirous not to mislead ıe hasty."

› first chapter contains an account of twenty-three cases ıis dependent upon hereditary syphilis. Mr. Hutchin-aims no credit upon the recognition of the taint in cases. Mr. Lawrence recognized it, and so have many observers. There is a summary of the cases given, 'ed by a series of aphorisms, from which we gather :

t the period of life at which syphilitic iritis occurs in ;s is about the fifth month after birth ;

t the subjects of the disease always show one or more well-recognized symptoms of hereditary taint ;

t most of them are infants born within a short period date of the primary disease in the parents ; and

t mercury is signally efficacious in curing the disease.

› second chapter treats of Chronic Interstitial Keratitis. ıundred and two cases are reported, and a summary omments are given. We learn from the latter :

t in a very large proportion of cases this form of kera-occurs in patients between the ages of 8 and 15 years ;

t from its being a well-marked and peculiar form of almia, it is *á priori* probable that it acknowledges one › and definite cause ;

that its subjects almost invariably have their upper central incisor-teeth, of the permanent set, dwarfed and notched in a peculiar and characteristic manner ;

that, when inquiries have been made, in a large proportion of cases, one or other parent has confessed to having suffered from constitutional syphilis prior to the birth of the patient ;

that recovery is slow and at the best imperfect, and the earlier a case is brought under treatment the more favourable the prognosis ; and

that the most successful treatment consists of the cautious use of mercurials and iodides, at the same time supporting the system by tonics and a liberal diet.

The third chapter contains an account of Inflammations of the Choroid and Retina dependent upon inherited syphilis. These cases are generally attendant upon the corneal disease. The changes chiefly involve the choroid, but are seldom limited to it. Free effusions of lymph into the substance of the membrane occur, and the retina often becomes detached. Fourteen cases are recorded, showing that there are various stages and degrees of severity of the disease.

Chapter iv. treats of Cataract and Inflammation of the Vitreous Body in connection with inherited syphilis. Mr. Hutchinson acknowledges that more accurate and extended data are required upon this section of his subject. He relates three cases of Cataract, in one of which, aged 20, there were typical teeth ; in the second, aged 14, the girl was known to be the subject of inherited syphilis ; and in the third, aged 3, there was a full history of syphilis in the parents.

The fifth chapter is on the so-called Aquo-Capsulitis, a term which our author says is alike barbarous in its terminology and erroneous in the anatomical theory which it suggests. He thinks that there can be no doubt that a large majority of the affections hitherto classed as cases of "Aquo-Capsulitis," or cases in which both iris and cornea are slightly inflamed, are due to hereditary syphilis. These cases are generally associated with interstitial Keratitis ; true "Aquo-Capsulitis" is rarely seen, and when observed there is seldom any reason for suspecting hereditary syphilis.

We next have an account of Amaurosis with White Atrophy of the Optic Nerves in connection with inherited syphilis. Mr. Hutchinson relates seven cases ; in five of which there

could be no doubt as to the history, and in the other two the diagnosis of hereditary taint was not conclusive. He says :—

"These cases are, however, quite sufficient to awaken our suspicions, and to induce us, in the event of meeting with atrophic changes of the nerve in young persons, to make special investigations as to the possible existence of a syphilitic diathesis."

The seventh chapter is devoted to the consideration of Deafness in connection with inherited syphilis :—

"In some cases of deaf syphilitic patients, the history is given of otorrhœa, pain, &c., and other evidences of external inflammation, in others no such symptoms have been present.

"A form of deafness which occurs in these patients and which, as far as what little observation I have made on the subject goes, appears to be peculiar to them, is one in which the function fails without any external disease. It is usually symmetrical. Not unusually its stages are rapidly passed through, and a patient who six months ago could hear almost perfectly, becomes—without otorrhœa and without any marked degree of pain—utterly deaf."

Twenty-one cases are related, and in the general comments it is observed that all of the cases in which the ears were inspected go to support the belief that the deafness of syphilitic children is due either to disease of the nerve itself or to some changes in non-accessible parts of the auditory apparatus. Its symmetry in all the cases would point to a central cause. The prognosis is very unfavourable.

We extract the introductory paragraph of chapter viii. on Diseases of the Ocular Appendages when dependent upon hereditary syphilis :—

"The wish to notice in this work all the affections of the eye and its appendages, which I have hitherto observed in connexion with inherited syphilis, induces me to devote a short chapter to diseases of the lids, the lachrymal sac, and the palpebral conjunctivæ. None of these affections are by any means peculiar to the subjects of hereditary taint. Of Iritis, Choroiditis, Kerato-iritis, and Interstitial Keratitis, as met with in infants and young persons, I venture the assertion that in a vast majority of instances, they are directly due to that cause. With tinea tarsi, etc., however, it is wholly different, they are very commonly simple affections, and very rarely syphilitic."

A chapter of miscellaneous cases, eleven in number, follows. These are cases of ocular disease in which other symptoms of inherited syphilis were present, and which determined the diagnosis.

The tenth chapter is entitled "On the means of recognition of the subjects of heredito-syphilis during the tertiary stage." It is impossible to epitomize it with any advantage to our readers, so we must refer them to the work itself.

And the body of the work is concluded by seventy-three aphorisms and commentaries respecting constitutional syphilis and its transmission from parent to offspring. Want of space alone prevents our printing these aphorisms verbatim.

An appendix follows containing a report on Choroiditis, Retinitis, &c., as met with in connection with acquired syphilis.

The book is illustrated by two beautifully executed Chromolithographic plates, showing the appearances presented in some stages of keratitis, and the syphilitic malformations of the permanent teeth.

We most cordially recommend this book to the serious attention of all those who have not hitherto made themselves acquainted with it.

On the Nature, Pathology and Treatment of Puerperal Convulsions. By RICHARD HODGES, M.D., F. R. C. S., Author of "An Essay on Uterine Hæmorrhage." London: Churchill and Sons, 1864. Small 8vo., pp. 96.

IN a preface, the author of this little book requests "every indulgence for the many imperfections and omissions contained in the accompanying essay, and he asks this for the reason that he has always been actively engaged in an extensive and wide-spread practice, and never, consequently, accustomed to the desirable art of expressing in writing that which he has seen." We are quite willing to grant the indulgence sought, though we are unwilling to acknowledge that the art of perspicuity in writing is a simple matter of habit. There are many people who write copiously without conveying any clear idea of what they really wish to say; and, on the other hand, there are many who seldom "rush into print," but, nevertheless, whenever they are tempted to do so, display no want of knowledge of their native tongue.

We do not intend to enter upon any criticism of this essay; its principal object is to impress upon the members of the profession that there is but one suitable or successful treatment of true puerperal convulsions (by which term Dr. Hodges understands the simple epileptic form), viz., early and free venæsection, followed by cold to the head and purgatives. The management of cases occurring in weakly women requires some modification, as does also the treatment of convulsions occurring as the result of hæmorrhage; these matters are lightly touched upon.

The consideration of the influence of emotion as an exciting cause of puerperal convulsions gives opportunity for the introduction of the following loyal paragraph:—

"The death of the Princess Charlotte, in 1817, from convulsions occurring after a tedious labour, depending on the arrest of the head of the fœtus in a pelvis below the average capacity, contributed powerfully to the development of the disease in many ladies, and through the powerful influence of emotion; for, within a short time of this event, many women went into labour under the influence of much fear or terror, and suffered likewise from convulsions—and puerperal convulsions were unusually prevalent at that time throughout the land, being certainly the evident result of the sad event which in that day was felt as a grief at every fireside. How grateful should we all feel at the recent safe and happy delivery of Her Royal Highness the Princess Alexandra, and that there did not arise in her case a complication so frightful—for, if there had been, unfortunately, this most fearful disease in connexion with the event, such a trial would not have been limited to the Palace, but would have extended its influence to many a home, thousands of miles away, perhaps; and saddened many a heart through the mysterious, yet effectual, influence the mind has upon the body."

The above is a fair specimen of the author's style. Had he taken care to avoid unnecessary repetition and to keep to the proper subject-matter of each division of his essay, it need not have occupied more than one-half the space it now does.

We are to avoid criticism, so we must presume that when Dr. Hodges speaks of "spasmodic constriction of the smaller and distant capillaries," (page 54) the word *capillaries* is a misprint for *arteries.*

This essay is in one respect the reverse of the treatise noticed in the previous article, for it is written from the

recollection of cases, and although a few particular instances of puerperal convulsions are shortly related, the details are evidently not drawn from any regularly recorded observations.

Report on Vaccination throughout the Presidency and Provinces of Madras, in the year 1864. Selections from the Records of the Madras Government, No. lxxxiv. Madras: Gantz Brothers, 1865. 8vo., pp. 39.

THE Principal Inspector General of the Medical Department, in a letter introductory to the extract from local reports, observes that:

"The operations of the department have been quite as unsatisfactory as on previous occasions."

During the year 1864, 3,11,587 persons are reported to have been vaccinated, a decrease of 7,237 on the previous year.

Dr. Cole notices that "it is very questionable how far the figures are reliable," and when we find that in some districts the per-centage of unsuccessful to successful cases is reported to be 0·96, 1·20, 2·30, 2·70, &c., we are not surprised at the remarks of the Governor in Council, that:—

"The extracts, appended to the foregoing letter, from the Annual Reports of the Medical Officers on the working of the Vaccine Department during the year 1864, go far to show that the returns sent in by the Vaccinators are, in most cases, not to be relied on."

We trust that the newly organized Vaccine department, under the energetic superintendence of Dr. Shortt, will submit much more reliable returns, and show far more satisfactory results than hitherto has been the case.

A Popular Lecture on Vaccination. By JOHN SHORTT, M. D., F. L. S., M. R. C. P. L., &c., General Superintendent of Vaccination. Madras : Gantz Brothers, 1865. 8vo., pp. 14.

THIS pamphlet is a laudable attempt on the part of the zealous General Superintendent of Vaccination for the Madras Presidency, to impress upon the community the certainty that by the practice of so simple and harmless an operation as vaccination, they may ensure an immunity from the ravages of one of the most terribly fatal, disgusting, and disfiguring diseases to which the human race is liable.

Dr. Shortt appears to have very satisfactorily performed the task which he set himself ; of course, the subject is one upon which there is nothing new to be said.

He very properly points out that the Mortuary Reports of Madras for 1859 show that the East Indian community had in that year a greater per-centage of deaths from small-pox than the Mahomedans, and he fearlessly tells them that "it is highly discreditable to them, that, rejoicing as they do in the benefits of Christianity, they should be more neglectful of this wonderful provision of Providence than the Mahomedan fatalist."

The lecture has been delivered in the Hindustani and Tamil languages by Dr. Shortt, and he has also prepared a Telugu edition. The Hindustani edition has been published by Syed Abdossutter Saneen, at his own expense, for gratuitous distribution amongst his co-religionists ; and the Tamil edition has found a publisher in the person of M. Parthasarthy Iyengar, B. A.

There is an appendix to the pamphlet containing a letter from Dr. Shortt to the head of the Medical Department, from which we obtain the above particulars, and in which it is recommended that the lectures should be freely circulated, and also introduced into the different schools as containing a brief and easily comprehended account of the benefits conferred by vaccination.

A reference to the Director of Public Instruction was ordered by Government, and that officer felt unable to recom-

nd the introduction of the lecture as a text book into ›vernment schools; first, because it would be injurious to und systematic instruction to introduce into schools a little ımphlet upon each point upon which it would be well for ıe people to possess correct views; and secondly, even were ›uch a course desirable, the lecture does not seem appropriate for the purpose.

However, Mr. Powell recommends that a few copies be placed in the Library of each of the Provincial and Zillah schools, and the perusal of the work be encouraged by causing the senior scholars each year to write upon the importance of vaccination.

The Governor in Council concurs in the opinion expressed by the Director of Public Instruction.

And we can only add that Mr. Powell's argument appears to us as undeniable as his suggestion, of encouraging these upon the subject, is judicious.

Surgery in Bengal: an Address to the Bengal Branch or the British Medical Association. BY J. FAYRER, M.D., F. R. S. E., and F. R. C. S. E., Professor of Surgery, and Surgeon to the Medical College Hospital. Calcutta: Cutter, 1865. 8vo. pp. 32.

AN able address written with the object of showing that "Surgery and Surgical Pathology have not suffered in the hands of Indian Surgeons." By the term "Indian Surgeons," Professor Fayrer designates both Native and European Surgeons practising in India, and with reference to Native Surgeons, it is scarcely necessary to say that he alludes to those only who have thoroughly grasped th science of medicine as it is taught in Europe, and wh have learned to practice with success the boldest operatio in Surgery.

Professor Fayrer refers to the various Indian Med Journals as a proof that India has fairly contributed

share to the annals of Surgery and Pathology, but he adds :—

"I will venture to say that you would have difficulty in adducing even a casual reference in any of the standard works professing to treat exhaustively of their respective subjects, to the authority, practice, or opinion of one Indian Surgeon.

"Let us take the operation of lithotomy, for example. The most elaborate description of all points, pathological, anatomical, chemical, or surgical, concerned in the disease for which this operation is performed; the fullest details, statistical and descriptive, of the proceedings and opinions of British and Continental Surgeons of eminence, who have been interested in, or distinguished for, their investigation or skill in operating for this grievous disease; every fact, in short, that could be collected, carefully collated and recorded, yet, not a word on the subject as it relates to India, where we count our operations by hundreds, I may say, and where some of our graduates have cut as many men successfully for stone as the greatest lithotomists Europe ever saw.

"Let me not be charged with exaggeration: I may refer to my friend Baboo Ram Narain's experience, who, within a period of 12 years, in the stations of Cawnpore and Budaôn, operated upwards of 200 times with a loss of 7 cases. Or, as an equally good illustration of the opportunities afforded, and the mode in which they are taken advantage of, I might adduce a recent donation of 17 large vesical calculi, presented to the College Museum by a Graduate whose degree is not yet a year old, removed by him, at the station of Pind Dadun Khan, within six months after joining his appointment. And I might refer to the names of O'Shaughnessy, Brett, Webb, Playfair, Naismith, Aitcheson, Partridge, Cayley and others, as of Surgeons who have had experience in this operation, that scarcely the Frere Jacques, Rau, or Cheselden ever exceeded."

We do not for a moment doubt that all this is very true, but we question whether the non-reference to the experience of Indian Surgeons is not partly due to the fact that the records of it are scarcely accessible to the authors of standard works, as they are but sparsely to be found even in the Indian Medical Journals, and are probably chiefly locked up among the archives of the late Medical Boards. Professor Fayrer supports his position that Surgery is extensively and successfully practised in India by giving the following table, the information contained in which he has been permitted to collect from the official records of the various stations.

Abstract of important Surgical Operations performed in the last six months of 1863 in 180 Hosp... Dispensaries in the Bengal Presidency.

PROVINCES.	No. of Dispensaries or Hospitals.	Number treated in Dispensary or Hospital.	Amputations.	Deaths.	Lithotomy.	Deaths.	Lithority.	Deaths.	Ligature of Arteries.	Deaths.	Removal of Tumours.	Deaths.	Scrotal Tumours.	Deaths.	Strangulated Hernia.	Deaths.	Radical Hernia.	Deaths.	Excision of Joints.	Deaths.	Trephining.	Deaths.	Plastic Operation.	Deaths.	Cancer.	Deaths.	Perineal Section.	Deaths.
Bengal	54	101,746	30	3	43	4	...	..	...	..	39	..	16	..	1	1	2	..	2	..	2	2	...	..	3	..	1	..
Calcutta.. ..		165,424	22	11	25	4	..	...	1	..	113	...	29	2	7	2	5	...	..	...	..	..	...	...	3	...	11	3
		267,170	52	14	68	8	..	..	1	..	152	..	45	2	8	3	7	...	2	..	2	2	..	..	6	..	12	3
North-West and Central Provinces.	89	271,816	40	6	330	25	1	1	..	..	99	...	1	...	..	..	2	1	3	..	..	..	2	..	6	3	4	..
Burmah	2	1,563	1	..	1	1	...	...	..	..	3	..	..	..	..	..	...	..	1	..	..	...	...	..	...	..	..	..
Punjab	35	110,316	22	6	224	31	..	..	..	..	31	..	..	..	2	..	..	..	1	..	1	1	1	..	2	...	1	..
		383,695	63	12	555	57	1	1	..	...	133	..	1	..	2	..	2	1	5	..	1	1	3	..	8	3	5	..
Grand Total..	180	650,865	115	26	623	65	1	1	1	...	285	...	46	2	10	3	9	1	7	..	3	3	3	..	14	3	17	3

The lecturer next addresses himself to the subject of Hospitals in India, and we regret that he is obliged to acknowledge that, as regards Calcutta itself, the Hospitals are generally utterly defective in structure. We fear that in our Presidency too, we cannot boast of anything very encouraging in this respect.

The third subject-matter of Professor Fayrer's address is Pyæmia from osteo-myelitis, one of the frequent causes of death after amputation, or other injuries, or surgical operations involving section of bone. He relates the experience of his own practice in two years. Thirty-two amputations, all capital operations, (three secondary) with fourteen recoveries and fifteen deaths. Of the deaths, nine resulted from Pyæmia the consequence of osteo-myelitis, three from Pyæmia not the result of bone disease, and six from Tetanus, Gangrene, Exhaustion. The Professor enters fully into the subject of osteo-myelitis, quoting the opinions of Mr. Jules Roux of Toulon, with which in the main he agrees. But we must refer our readers for particulars to the address itself, which may be obtained at the Military Orphan Press, 6, Bankshall Street, Calcutta.

We have also before us a pamphlet of 13 pages, issued from the same press and containing a detailed account, by Dr. Fayrer, of a case of secondary amputation at the hip-joint on account of osteo-myelitis after primary amputation of the thigh. The case terminated in recovery, and it is highly creditable to the skill of the Surgeon who treated it. There is a curious typographical error running almost entirely through the report, viz., the addition of the sign ° (degree) to the numbers indicating the rate of the pulse.

PART III.

MEDICAL MISCELLANY.

No. 1.—*Rupture of the Abdominal Aorta, with remarks.* By LESTOCK W. STEWART, ESQ., Surgeon, 13th Regiment Native Infantry.

THE following case of rupture of the abdominal aorta terminating fatally, appears worthy of record for two reasons, as it is hoped will appear in the sequel.

Rupture of so large and important a vessel as the abdominal aorta, as a matter of course, must have been fatal, and it seems almost superfluous to say that the case under consideration resulted in death. Still, as the case was a complicated one in connection with (it is presumed) a former rupture of a vessel of some consequence in the animal economy, the heading of the case may be considered reasonable.

Musician G. C., Æt. 27, was admitted into hospital on the 14th November 18—— complaining of pain in the left hypochondrium, in which situation a circumscribed lump or swelling was perceptible. There was slight increased heat in the part; skin natural; tongue clean; bowels rather costive.

The pain was of two or three days' standing, but on the day of the man's admission into hospital it was more severe, so much so that he stated he "*could stand it no longer.*" He found that by pulling the skin over the swelling he felt relief.

A few months previously, and before I joined the regiment (13th N. I.), this man suffered from a similar pain in the same situation.

On admission was ordered

Pulvis Jalapæ Co. ʒi.

Hirudines No. vii. to be applied over the seat of pain, and afterwards the part to be fomented.

Hydrarg Chloridi gr. iii.

Opii. gr. i. M. fiat pil.

to be taken every 3rd hour.

The next day (15th) he was no better, and his bowels had been only partially moved; ordered the following

Hyd. Chlor. gr. iii.
Ant. Pot. Tart. gr. ¼.
Opii. gr. ½ M. fiat. pil.
to be taken every 3rd hour.
Enema Purgans Statim.

On the 16th he complained of the pain being more severe and diffused. There was also some pulsation apparent in the swelling after visiting him in the morning of 15th, but on the 16th it became very perceptible. On auscultation the sound demonstrated clearly the existence of an aneurism, and the pulsations were sufficiently strong as to raise the hand when placed over the swelling. Bowels moved freely by the enema; tongue slightly dry; skin moist and cool; urine turbid and scanty; heat applied to it increased the turbidity, but nitric acid rendered it subsequently clear; pulse 140, small; countenance anxious.

℞. Magnes Sulph. ʒiv.
Æthr. Sulph. ʒi.
Tinct. Senna ʒiii. Inf. Senna ℥iss.
M. fiat Haustus Stat. Sumend.
Pulv. Digitalis gr. ii.
Ant. Pot. Tart. gr. ¼
Opii. gr. ½ M. fiat pil.

to be taken every 2nd hour; small quantities of nourishment to be given at intervals.

On the 17th the swelling had extended to the right side, though he expressed no sense of pain on pressure or percussion over that side. The whole swelling pulsated to a considerable extent.

Pulse 112; tongue rather dry; urine turbid, but becomes clear on applying heat; sp. gr. 1·22. Afraid to lie on either side, on account of the pain being increased.

℞. Tinct. Digitalis, ♏. xx.
Liq. Ant. Pot. Tart. ʒiii.
Spt. Etheris Nit. ʒi.
Mist. Camph. ℥i;
fiat Haustus.
to be given every 3rd hour.

At about 5 o'clock P.M. on the 17th, the Apothecary sent to me to say that the man became very restless. Pulse 120; skin cool, no pain; and at 6 P.M. he suddenly expired.

Autopsy made at 8 A.M. on the 18th.

On removing the thoracic and abdominal parieties, and turning over the sternum, the pericardium, liver, stomach, and small intestines were exposed.

A ligature was placed on the cardiac and œsophageal ends of the stomach, and the intestines carefully removed to one side, so as to ascertain the exact position of the ruptured aneurism.

Proceeding with the inspection on the left side, a large black looking mass, weighing upwards of three pounds, was observed to occupy the region of the left kidney. This was with some difficulty removed from the body, and on making a section through it, it was found to consist of semi-organized blood, with the left kidney half its natural size embedded in its centre. The coagulum had a very thin membranous covering, not in the least allied to the outer tunic of an artery. On raising the small intestines, a large quantity of fluid and partly coagulated blood was seen to occupy the abdominal cavity; and on still further removing the intestines, and reaching the vertebral column and aorta, a large sacculated opening was seen in the latter, between the splenic and renal arteries. In fact, this was the situation where the aneurismal tumour had ruptured, and discharged its contents into the abdominal cavity, when death almost immediately occurred.

From a review of this case, it would seem that a rupture of the renal or one of the Malpighian arteries took place on the occasion of this man's previous admission for pains in the region already described; but the blood being confined within the fibrous capsule of the kidney, could not escape, and thus became organized as has been stated. The kidney being thus confined within the large coagulated mass, gradually diminished in size, and no doubt altogether ceased to secrete any fluid.

I can in no other way account for the coagulum surrounding the left kidney, and if such be really the case, I think it is a solitary instance of the kind, and consequently worthy of note.

With regard to the progress of the aneurism which resulted in death, nothing further could have been done to avert such a climax. No surgical skill, in my opinion, could have saved my patient, and medicine could only alleviate.

The predisposing cause of aneurism in this case was disease of the arterial system. Around the edges of the rupture the artery was soft and pultaceous, or, in other words, atheromatous; and the exciting cause was, no doubt, violent exercise in the discharge of his duties as a Musician. His instrument was the Bassoon, which required considerable wind.

No. 2.—*Two cases of Cancer of the neck of the Uterus.* By JOHN SHORTT, M.D., F.L.S., M.R.C.P.L., &c., General Superintendent of Vaccination.

CASE No. I.

IN 18——, A B., Æt. 50, widow, East Indian, of French extraction, and a native of Pondicherry, a teacher of music by profession, sent for me to see her, as she was said to be dangerously ill at the time. The patient, I found, was an elderly-looking female, of obese habit of body, said to have had two children, one of whom, only a girl, now alive. She has been a widow for upwards of 25 years, and has hitherto been in the enjoyment of good health; but during the last 18 months (prior to which menstruation had long ceased), she became subject to an offensive leucorrheal discharge, soon followed by periodic floodings, and in the intervals, an ichorous discharge, staining her linen. Looks anæmic, with a peculiar expression of countenance, so expressive of malignant disease; suffers much from pricking and shooting pains in the pelvis. When seen, the patient was just recovering from an attack of flooding; countenance pale, with a tendency to wander, restless, pulse barely perceptible at the wrist; skin cold, and covered with perspiration, is apparently unconscious. Brandy and water, beef-tea, and other nutrients and diffusable stimulants were had recourse to, the vagina washed out with a cold saturated solution of alum lotion, and the passage plugged with bits of old cloth moistened in the same, arrested the flooding completely, and she began to revive.

On making a more careful examination a few days after, the cervix of the uterus was found degenerated into a cancerous mass, involving the surrounding tissues, and fixing the uterus immovably in its place.

The offensive discharge was moderated with disinfectant injections (Condy's fluid) and mineral astringents, and the general health supported by nutrients and mild stimulants, tonics, cod liver oil, &c., notwithstanding which the disease continued to progress, and the patient became completely exhausted, and sank 6 months after from exhaustation, consequent on a severe attack of flooding.

Case No. II.

C. D., Æt. 39, East Indian, of Scotch extraction; married; mother of 12 children, most of whom are now alive ; of spare delicate make, but of late has been growing stout, with a pale, sickly, yellowish complexion, is of active habits, intelligent, and a careful, anxious mother. General health good, suffered from an attack of intermittent fever, and became the subject of splenitis for a time, after which she took cholera, but made a good recovery from a state of severe collapse, subsequently suffered from a sharp attack of mucous diarrhœa. In 18——, on the birth of her sixth child, suffered from post partum hæmorrhage, from which she recovered by the use of the cold douche, and again after her ninth child she suffered in a similar way. Subsequent to this had an attack of passive flooding for many days which weakened her a good deal, on recovery she was sent for a short change, which benefitted her greatly, and her general health subsequent to this was excellent, and she gave birth to three other children.

The patient gives the following account of herself. On the birth of my fourth child (a girl), soon after delivery, I was dressed, and wished to be shifted to another cot from the one I was confined on. A female friend, who was present on the occasion, of rather masculine proportions, undertook to do the needful. She carried me off the soiled and threw me on to a clean bed, which was alongside, with some force, that I immediately felt a severe pain in the left side of my womb. I felt at the time that the fall or throw had hurt me somehow, and I complained of it, and that pain never left me completely since. I always felt a soreness on that side of the womb, and could point out the exact locality where I felt the part weak and tender to smart pressure ever after.

In 18——, she left the country for England with her family having her 12th child in arms. In September of the following year, whilst spending the evening in her own house with

a few friends, she was suddenly taken alarmingly ill, with severe flooding, and, to all appearance, was looked upon as dead, being cold and pulseless, and covered with clammy perspiration. With difficulty she was brought round. She had, previous to this, for some time, an offensive leucorrheal discharge, of which she did not complain nor notice. She continued to suffer from severe lumbar, sacral and abdominal pains, with a sense of bearing down and difficult defecation. The only time she obtained relief from these symptoms was during and some time after the floodings, which came on irregularly, varying at intervals of from three to six weeks, and always suddenly; large clots of blood used to come away on these occasions. Generally in the mornings she felt better, and, to all appearance, looked cheerful, but as the day advanced, she would be in agony from pain, and the offensive discharge continuing at the same time, and in the course of 3 or 4 hours the pains and discharge would abate as suddenly as they appeared, when the patient would become cheerful again. The vaginal discharge became extremely offensive, and she was never free from either the offensive discharge or flooding. The medical gentleman, who was now in attendance, found, as he stated, a polypus attached to the neck of the uterus which he removed. I, happening to be in England at the time, was called into consultation, and, on examination through the speculum, saw what appeared to me a broad surface of ulceration, about 2½ inches in diameter, with the edges everted, presenting a very suspicious appearance indeed; but some three months after, the disease advanced so rapidly, that an eminent obstetrician was consulted, who pronounced the disease a corroding cancer. The disease now rapidly ran its course, the whole of the neck of the uterus was converted into a cancerous mass, which soon involved the surrounding tissues, corroding through the rectum and vagina, and throwing these passages into one. Now, for the first time, the patient began to lose flesh, and her throat became affected, about six weeks prior to her death, when she scarcely spoke, complaining of her throat and inability to speak, she was slightly delirious, and sank gradually about 18 months after her first serious illness.

The treatment consisted of tonics and astringents, with stimulants and nutrients internally. Alum lotion, alum bath, Tinct. Ferri Sesquichloridi and other astringents and styptics were had recourse to externally.

Remarks.—The last case is of great interest, for there was no family tendency to cancer; in the patient's family, her mother, grand-mother, two maternal uncles, and two of the patient's brothers, were all alive and in the enjoyment of perfect health. Her father's family were also healthy, I believe. Under these circumstances, can the disease the patient suffered from have been acquired? or can it be traced to the injury she is said to have sustained after her fourth confinement? The seat of uneasiness or weak point, as she used to term it, was beneath the lower margin of the left ramus of the pubis, about an inch from the symphysis, there were no external indications of disease, but the tenderness was apparently seated within the pelvic cavity. The patient married early. She was a mother at 16 years of age, and a large family, as will be observed from the case, was the result. At best, such cases are very unsatisfactory, and all we can do is to palliate the most urgent symptoms, so as to make life as tolerable as possible under the circumstances.

No. 3.—*A Case of Hœmatemesis.* By D. C. McCallum, M.D., Assistant Surgeon, 5th Infantry Hyderabad Contingent, and in Medical charge Staff and Details at Bolarum.

(Communicated by the Principal Inspector General, Medical Department.)

Conductor A. W., Æt. 55, Ordnance Department; in India 33 years and 9 months; temperament, sanguine; habits, temperate; habit of body, stout.

August 19th, 1865.—Mr. W. was suddenly seized with profuse vomiting of blood this evening at 7 o'clock. On my arrival I found him very low; pulse quick and scarcely perceptible; skin covered with a cold clammy perspiration, and restless. He also complains of headache confined to the top of the head. On enquiry I was told he had complained of headache and want of appetite for some days past; but afterwards felt well and in good spirits. Directly after my arrival he threw up a very large quantity of blood, fully 3 quarts, in form of coagula and liquid.

Former history.—Mr. W. has suffered frequently from rheumatism, dyspepsia, and from occasional attacks of fever, and once from what I think must have been a slight attack of

coup-de-soleil. I am told he has not been a hard drinker, and certainly since he came to Bolarum he has scarcely touched any spirits, &c.

In November last he had an attack somewhat similar to the present one, but it soon yielded to acid treatment. He came to Bolarum suffering from guinea worm. He has never complained of pain in the epigastric region or of nausea, or of sickness after or before meals. As far as I can gather from his statement, he has never had any symptoms of ulceration or cancer of the stomach.

Present state.—As above stated, the patient is very low, the matter vomited is pure blood with a little food mixed with it. The attack came on quite suddenly ; he was sitting in the verandah smoking when he felt sick, and he at once brought up something black, as he states. Since my arrival he has vomited twice, and large quantities of blood were ejected. Before each act of emesis he feels a sensation of distension and pricking pain in the stomach, after which nausea and then sickness ;—directly the stomach is relieved, he feels comfortable. On examination I find his liver of usual size, and no pain in it on pressure, kidneys are acting normally. No perceptible enlargement of the spleen, nor does he complain of pain on firm pressure being made over that organ. Bowels were moved.

Treatment.—On arrival I at once gave him small pieces of ice to swallow frequently, and applied ice externally over the abdomen, and gave him 30 drops of diluted sulphuric acid in water. The first dose of the acid mixture was given him with ice, at 10 P. M., immediately after having vomited a large coagulum of blood, and up to the present time, (11-30 P. M.) he has had no vomiting, but has been dozing, though restless. No pain or nausea. Pulse of better strength, and temperature rather above the standard of health, and dry. I have given him 20 drops of the Per-Chlorodyne, and left instructions for him to have cold broth with ice, and small quantities of brandy if there be no more vomiting.

20th.—At 5 A. M. he vomited a large quantity of black blood (effect of the acid), but up to that time he was dozing. This morning he states he is free from nausea and pain ; has had a copious black stool ; pulse small and quick ; skin moist ; no headache.

Continue acid, &c.

Vespere.—Same as above.
Continue Acid mixture, &c.

21st.—Threw up a small quantity of blood about 8 A. M.; feels uneasiness in the stomach and great thirst; skin warm.
℞ Muriate of Morphia gr. ¼.
In cold water every 4th hour.
Continue Acid mixture.

Vespere.—Pretty comfortable this evening, no sickness.
Continue Morphia and Acid.

22nd.—Feels stronger; no sickness or nausea; bowels moved, a copious black stool.
Continue medicine.

23rd.—Same as yesterday.

24th.—Feeling himself stronger, he got up and went into another room, and immediately after he commenced throwing up large quantities of blood. Ice checked it.
Acid mixture continued.

27th.—From last report has been free from sickness and feels stronger, though skin is still warm. Feels pain in the head over the longitudinal sinus. About 5 A. M. again vomited large quantities of red coagula and fluid blood.
℞ Emplast. Cantharid. 3×4 to nape of neck.
℞ Acetate of Lead—℥ ss.
Ext. Opii. gr. iii M. fiat Massa.
divide in 6 pills.
One every 3rd hour.
Purgative Enema
to be given directly.

28th.—At noon vomited large quantities of blood, arterial and venous.
Continue medicine.

2nd September.—Since last report he has been quiet; though not gaining strength. As he disliked the pills I have discontinued them, and he is now taking lime water and milk frequently, and having frequent enemata of broths, brandy, and laudanum, which have always been retained. After my visit he has again been throwing up large quantities of blood.
Ordered a blister over the region of the stomach.
Continue enemata, &c. &c.

4th.—Again vomited blood.

7th.—Again vomited blood frequently, more or less all day. Ordered lime juice and water to quench thirst.

10th.—No sickness, but is evidently gradually sinking. Has had no sickness since the 7th instant. Is slightly comatose, but is roused by speaking to. Urine free; skin cool, moist; pulse thready. Has had brandy and broth enemata regularly.

7 P. M.—Getting weaker; pulse thready; difficult to rouse; refuses to take any thing, and at ¼ to 1 on the 11th morning he quietly expired without a struggle.

Post Mortem appearance.—Head not opened; chest and abdomen opened; contents of the thoracic cavity, healthy and pale.

Abdominal cavity.—Liver natural size, and perfectly healthy; large and small intestines healthy.

Stomach.—Was in connection at its pyloric end with an enlarged spleen; several apertures formed through the coats of the stomach into the body of the spleen; spleen, slightly enlarged and friable.

The hæmorrhage from which the patient died was splenic, as is shown from the adhesion and apertures between the two organs.

All the abdominal organs very pale.

NOTE BY THE EDITOR.—The subject of the foregoing case was upon three or four occasions under my care before he went to Hyderabad. He was on sick leave when I first saw him, and was in such a debilitated state that I obtained an extension of leave for him. He had a decidedly scorbutic taint; his gums were very spongy and bled upon the slightest touch; he was pale, spanæmic and very weak, with wandering pains; but there were no ecchymoses upon the cutaneous surface, though the mucous surface of the hard palate was almost black from sub-epithelial hæmorrhage. He had considerable epigastric tenderness, and twice he vomited large quantities of blood. He was treated with liberal diet, tonics, chiefly ferruginous, and, on the first occurrence of hæmatemesis, with gallic acid, a few five grain doses of which quite controlled the hæmorrhage. Upon the second occurrence of hæmatemesis, he was seen, during my absence, by my Apothecary, Mr. Thompson, who administered a dose of gallic acid and advised his going into the General Hospital. I never saw him afterwards, but learnt on enquiry that he speedily recovered in Hospital, returned to his duty, and was subsequently transferred to Secunderabad.

No. 4.—*A Fatal Case of Acute Hepatitis following an Injury, and resulting in Abscess; large hæmorrhage from the Bowels; ulceration of the mucous coat of the Colon at its hepatic flexure.* By W. N. CHIPPERFIELD, Acting Physician, General Hospital.

J. E. S., aged 39 years, a Mechanical Engineer by trade, Englishman by birth, of a nervo-sanguine temperament, and of temperate habits.

5th September 1865.—Was admitted into the Surgical Ward yesterday, complaining of having suffered some injury to the spine. Dr. Paul requested me to see the patient with him this morning, and drew my attention to the fact that the hepatic dulness could be detected over a very much increased space, and I offered to take the patient under my care. He was, therefore, transferred to the Medical wards, and the following notes were taken.

Present state.—Complains of pain and sense of weight in the right hypochondrium, of *five days* duration. There is considerable fulness below the costal cartilages on the right side, extending to the right half of the epigastrium. Deep pressure is irksome to him, and even on gentle pressure much elasticity and indistinct fluctuation can be detected. Hepatic dulness commences at two and a half inches below the nipple and extends to the same distance below the cartilages in the right hypochondrium and to the linea alba about five inches below the ensiform cartilage. Has no pain in the right shoulder, has no cough, can lie on either side. Pulse 96, full, firm, and slightly jerking; skin warm and moist; tongue red at tip and edges, thickly coated in centre; bowels rather relaxed; stools semi-fluid, bilious feculence; urine normal in quantity, free from bile or albumen.

There is an angular prominence in the site of the spinous process of the eleventh dorsal vertebra, but no lateral movement can be detected. Pressure on either side of the prominence gives slight pain. Has slight weakness of the lower extremities, but there is no paralysis or anæsthesia. Can rise and walk along the ward; is in good spirits, and requests to be allowed an easy chair and to sit in the verandah.

History.—States that he has enjoyed very good health up to *five weeks* ago, when he fell from a height of about 5 yards

alighting on his feet. Since that time he has had pain in the *back*, and has found himself rapidly losing health and strength. Has had pain in the abdomen, somewhat severe, for *five days* only, did not notice any uneasiness there previous to that time.

Ordered Broth diet.

Spongio-piline saturated with Solution of Opium over the tumour.

℞. Pulv. Ipecacuanhæ Co. gr. x.
At 7 P. M.

(The following daily reports are from notes taken by Mr. Assistant Apothecary E. Atkinson.)

6th September.—Slept badly. Pain in side much the same. Tongue as yesterday; bowels moved; pulse full and rather firm. Could eat some solid food.

To have chops for dinner.
No medicine during the day.
Opii. gr. ii. in pil. at bed-time.

7th, 8 A. M.—Slept pretty well. No improvement in other respects. Hepatic dulness and tenderness continues much the same. Pulse changed in character, 100, soft and rather weak; tongue cleaning; bowels moved freely, stools semi-fluid.

Continue Opiate Epithem.
℞. Quinæ Disulph. gr. ii.
Acidi. Sulph. Dil. ♏ x.
Tinct. Camphoræ Co. ʒ i.
Aquæ font. ℥ iss. M.—thrice daily.

Vespere.—Says he has felt much depressed to-day. Pain and fulness about the same. Skin of good temperature; pulse 108, full, soft; tongue moist, coated in centre, clean at tip and edges; bowels moved.

℞ Opii. gr. ii. in pil. at bed-time.
℞ Vini Xerici ℥ ii.
Sacchari ℥ ss.
Aquæ tepidæ ℥ iii.
At 8 P. M.

8th.—Slept pretty well. Continues much the same as yesterday. Pulse 108, full, a little jerking; bowels moved comfortably this morning.

℞ Quinæ Disulph. gr. ii.
Acidi Nitrici Diluti ♏ xv.
Aquæ font. ℥ iii, thrice to-day.

Vespere.—Much the same; bowels moved several times, stools liquid feculence; pulse 98, soft, weak.

Repeat Opii. gr. ii. at bed-time.
Repeat Negus.

9th.—Slept pretty well. Hepatic fulness and pain continues the same; had some pain in the lumbar regions last night, better now. Tongue white in centre, red at tip; pulse 96, soft; skin temperate.

Continue.

Vespere.—No change. Bowels moved several times, stools semi-fluid, yellow feculence mixed with a fair quantity of urine; tongue the same; pulse 96, soft, and feeble; skin warm and perspiring freely; has great thirst.

Repeat Opium and Negus.
℞. Acidi Sulphuric Diluti ʒi.
Aquæ font. Oi. M. to be used as a drink during the night.

10th.—Slept badly. Bowels moved frequently, stools principally composed of large dark masses of coagulated blood, no feculence, several small white masses of fat floating in stools; urine scanty; abdominal pain severe; tumour much larger, producing a very decided prominence in right epigastrium; very tender to the touch, fluctuation distinct, but no sign of adhesion having taken place, the parietes being quite movable; skin pallid, warm, moist; pulse 100, feeble; tongue pale, moist, foul.

℞. Acidi Gallici. grs. v. every third hour.
Sherry 2 oz. thrice a day.
Continue Opiate epithem.

Vespere.—Bowels moved but once, one large clot of blood. Is much the same.

Continue Pill, Negus and Acid drink.

11th.—Slept fairly; says he feels better; less pain in tumour, which continues of same size. Bowels moved once; tongue clean, moist; pulse soft and weak.

Omit Gallic Acid. Continue Sherry.

Vespere.—Much in same state. Stools three, yellow liquid feculence, no blood.

Continue Opium, Negus and Acid drink, which assuages his thirst.

From this time he remained much the same until the

20th.—Pulse small and feeble; tongue clean and moist; a small quantity of dark blood in the stools.

Repeat Gallic Acid if necessary.
Continue Sherry.

Vespere.—No improvement. Again passed a small quantity of dark blood; looks very pale and depressed; pulse very feeble; has had two doses of gallic acid.

℞ Chlorodyne ♏ xx.
Aquæ ℥i. at bed-time.

21st.—Slept badly. Hepatic tumour somewhat larger and more defined; tongue very foul at base, clean at tip; pulse small, feeble; skin temperate; bowels moved twice, no blood in the stool.

Continue Sherry.

Vespere.—Much the same; a little coagulated blood in stool this evening.

℞ Morphiæ Hydrochloratis gr. ¼ at 8 P. M.
Continue Negus.

22nd.—Slept well; much the same; stools free from blood. Pulse very weak; tongue quite clean on anterior half.

Continue Wine.

Vespere.—Has had diarrhœa to-day; stools liquid, free from blood; much pain just below edge of tumour; very tender upon pressure.

Ext. Opii gr. ¼ in pil.
every four hours.
Repeat Negus.

23rd.—Slept well. No pain in or about tumour now.

Continue.

25th.—Not so well; is looking very pale and haggard; tumour much the same; bowels frequently disturbed; stools fluid, yellow; pulse small and very feeble.

℞ Acidi Gallici gr. v.
Ext. Opii. gr. ¼ M. f. Pil.
to be taken thrice to-day.
Sol. Morphiæ Acet. ʒss.
Mist. Camph. ℥i. M. f. Haust.
at bed-time.

26th.—Is rapidly emaciating, looking very haggard and distressed this morning. Skin cold and clammy; pulse very

feeble; tongue foul at base, pale and dry in centre; bowels moved several times; stools semi-fluid.

Repeat Pil. every 2nd hour.
Sherry 2 oz. thrice or oftener if required.

27*th.*—Rapidly becoming worse. Very feeble now. Bowels moved frequently, no blood in stools.

℞ Zinci Sulph. grs. v.
Tinct. Opii. ♏ xx.
Aquæ Font. ℥ii.
ft. Enema
to be given every three hours.
Brandy 1 oz. every 3 hours. Soup frequently.

Vespere.—Much the same. Does not like the brandy. Bowels moved several times; skin cold and clammy; pulse thready; has had hectic flashes to-day. As there was evidence of adhesion having taken place, a small trocar was introduced at the most prominent part of the tumour, and a small quantity of pus escaped; wound covered with collodion.

Repeat Sherry thrice during the night.
℞ Sol. Morphiæ ℥i. at 8 P.M.

28*th.*—Slept pretty well, but is looking very haggard and distressed this morning. Skin clammy; pulse small and feeble; bowels moved but twice. A larger trocar was introduced, and about 12 oz. of thin pus escaped.

Poultice over tumour.
Continue Sherry and Soup.
Repeat Morphiæ gr. i. at 8 and 12 P.M.

29*th.*—No improvement. Slept badly. Complains of much pain in the tumour. Bowels moved several times; tongue dryish and brown; pulse very weak. The puncture in the liver was enlarged with a bistoury this morning, and 3 lbs. of creamy pus and several shreds of broken-down tissue escaped.

Continue support and sedatives.

30*th.*—A large quantity of pus came away with the poultice last night. Is very weak this morning. Pulse very small and feeble, 124; bowels moved several times, no blood in stools; tongue dry.

Sherry 1 oz. every hour.
Broth and Beef-tea frequently.
Egg Flip with milk thrice.

1st October.—Slept pretty well, but is not refreshed. A large quantity of pus escaped into the poultice. Is evidently sinking. Pulse 150, very feeble; skin cold and covered with cold perspiration.

Continue Wine and Flip.
℞. Acidi Nitrici Diluti ♏ xv.
Infusi Cinchonæ ℥ iii.
M. f. haust. thrice.

2nd.—Is sinking rapidly.
Expired at 9 A. M.

Post Mortem at 4 P. M.—Body somewhat emaciated. An incision, an inch in length, exists about 2½ inches below inner extremity of cartilage of 8th rib.

Head—Not examined.

Thorax.—Two ounces of straw-coloured serum in the cavity of the pericardium. *Heart* natural size, but pale and slightly covered with fat on its right border. Cavities half filled with dark blood. *Lungs*, healthy.

Abdomen.—Great omentum drawn up over the superior border of transverse colon and adherent to abdominal parietes. *Liver* enlarged both upwards and downwards, and adherent together with the great omentum to the abdominal parietes over a surface about 3 inches square. The incision in the parietes leads through the centre of this adhesion to an irregular oval cavity existing in the anterior and inferior part of the convex surface of the organ close to the free edge, and to the extreme left of the right lobe. The cavity is surrounded by liver tissue in a sloughy, shreddy condition, and large hepatic veins traverse the whole of the cavity. A large clot of blood lies in its lower part. Liver substance blanched, but firm, no other abscesses exist. *Stomach*, healthy. *Small intestines* healthy. At the hepatic flexure of the *colon*, which is much compressed by the enlarged liver, there are signs of peritoneal inflammation, and upon laying the bowel open there are seen four ulcers about the size of a shilling and extending through both mucous and muscular coats; there are small clots upon these ulcers, and the contiguous surface of the bowel is much congested. *Kidneys* of natural size and consistence, cortical portion unusually pale.

Remarks.—The following remarks were made to the Clinical class at different periods during the progress of the case.

5th September.—Notwithstanding the careful examination which has just been made in this case, and taking into consideration all that we have been able to learn of its history and present aspect, I cannot pretend to be able to arrive at anything like a certain diagnosis. The patient says he was quite well five weeks ago, when he fell from a height, alighting on his feet. Now, the consequences of such a fall may be various; it is seldom any direct injury occurs to the lower extremities;—the brain may receive a great shock,—concussion in fact,—from *contre-coup;* or the base of the cranium may be fractured, or some portion of the vertebral column may be fractured, or displaced; or the spinal cord may receive a shock, or such injury as ultimately leads to inflammatory changes; or, if any of the abdominal organs are in a morbid condition, they may suffer;—thus I have known rupture of an enlarged and softened spleen with fatal hæmorrhage to occur from such an accident.

There are two points, however, about which we can be certain—

First.—The man is in a bad state of health, with considerable constitutional disturbance, coincident with, and symptomatic of, a local lesion.

Secondly.—There is a large soft tumour in the right hypochondrium and corresponding half of the epigastrium. And this tumour is evidently directly continuous with the liver; the hepatic dulness continues on to the tumour, no resonant tissue intervening. The hepatic dulness is also considerably extended upwards.

Now have we to deal here with simply an enlarged and suppurating liver (there is indistinct fluctuation you will remember) the result of an attack of hepatitis; or is the tumour a hæmorrhagic one? The latter is possible in this wise:—At the time of the fall a rupture of the hepatic substance may have taken place near to the posterior and inferior border of the organ, opening one or more of the hepatic veins (which you know are adherent by their walls to the liver parenchyma and always remain patent when a section of the liver is made;) a slow accumulation of effused blood may have taken place separating the capsule from the parenchyma and gradually gravitating towards the dependent free border, until the present tumour has been formed. You will notice that, whatever it is, the softening part is quite at the inferior part of the organ, for immediately we

leave the lower border of the tumour, the resonance of bowel can be detected.

The patient says he had no abdominal pain or tenderness or fulness until five days ago, that he has had no fever, nor rigors, nor any icteric tint of the skin. He is very anæmic in appearance, and you will observe his conjunctivæ are free from any tinge of bile pigment. These facts would lead us to the second supposition, viz., that the tumour is the result of the gradual effusion and accumulation of blood. But then we must remember that hepatitis, acute, subacute, or chronic, may occur and run on to the formation of abscess without any very marked symptoms. The man has probably been so occupied with the supposed seat of injury,—the lower part of the dorsal segment of the spine,—that his attention has been diverted from the really suffering organ; for it is improbable that such extensive mischief should have happened to the liver in only five days.

I am, therefore, obliged to say that our diagnosis as to the exact *nature* of the tumour must be doubtful; but there can be no hesitation in saying that the prognosis is grave at the least,—we will put it down, unfavourable.

10th.—Our patient is not doing well. He is weaker, his pulse is rising, he gets clammy sweats frequently. His bowels are disturbed, and last night he passed, at least, a pound of coagulated dark blood. The tumour is larger and softer, fluctuation is very distinct, but no adhesion has taken place between the surface of the swelling and the abdominal walls. Hitherto we have no further aid to our diagnosis of the nature of the tumour, for even if it were hæmorrhagic, it would soften,—clot breaks down and forms a diffluent purulent mass.

Where does the blood come from? The tumour must press upon the transverse colon. Adhesion may have taken place, and ulceration into the bowel have occurred; and the hæmorrhage may be either from the ulcerating bowel, or, if the tumour is hæmorrhagic, part of its contents may have escaped into the bowel. However, there is no pus in the stool, so most likely the blood is from the ulcerated mucous membrane.

Whatever may have been the nature of the tumour upon its first appearance, I cannot now fail to recognize that it is an abscess, and I shall anxiously watch for signs of adhesion

and then puncture. Looking at the condition of the patient, you can now see for yourselves that the prognosis is bad.

27th.—Last night I passed a trocar into the tumour, and some thin reddish pus escaped, this morning you have seen me let out a large quantity, with some small clots of blood, and some shreds of sloughy tissue. There were signs of adhesion before I punctured, but I should not have hesitated even had they not existed, for within the last few days, the tumour has much increased in size and become very soft, and the patient has had hectic. If the pus does not escape freely I shall enlarge the opening. The character of the discharge permits of my now saying that the tumour was not originally hæmorrhagic; had it been so, we should have had a less creamy pus and more broken clot. I fear our patient has not many days to live.

2nd October.—The post-mortem examination has cleared up this case. The liver is very much increased in size, pale, of nutmeg-appearance, and firm. The abscess is close to the inferior border and the longitudinal fissure, quite at the anterior surface of the organ. Its cavity would contain about 10 or 12 ounces of fluid, but you recollect that we evacuated 3 lbs. at one time, five days since; our inspection has shown us where the blood came from;—clearly from the ulcers at the hepatic flexure of the colon. There are no signs of healing about them, and had the patient not succumbed to the effects of the abscess, one or more of them might have gone on to perforation, setting up a fatal peritonitis.

With reference to the condition of the liver apart from the abscess, the post-mortem appearances are those which we recognize as indicating chronic inflammation. The nutmeg-like appearance denotes a hypertrophy by multiplication. The tissue is firm and does not break and crack easily as in cases of hypertrophy from increase in size of textural elements.

As to the comparatively small part of the liver occupied by the abscess:—I must tell you that acute hepatitis seldom affects the whole of the organ, it is generally limited to one part, or occurs in two or more isolated patches.

And as to the absence of symptoms before the occurrence of abdominal tumour:—If you refer to Frerichs' Treatise on Diseases of the Liver,—which you will find in the College Library,—you will observe that the absence of any functional derangement indicating the occurrence of hepatic inflamma-

tion is by no means unusual; and many cases have been recorded in which there was not only no functional derangement observed, but in which even no local symptoms were detected, and yet they proved to be cases of hepatic abscess of considerable size. In our case we had the local symptoms, but we were unable accurately to recognize to what they were due. This was chiefly in consequence of the history which the patient himself gave.

This leads me to anticipate a question which you will most likely put:—Was the abscess in this case in any way connected with the fall? I think so, most decidedly. Cases of traumatic hepatic abscess are not common, but Drs. Budd and Moorhead both mention having met with such cases. And I certainly think, that in this case, the actual inflammation which ended in abscess, was the result of injury to a previously damaged organ, which injury was caused by the fall he had five weeks previous to his admission and nine weeks previous to his death.

The case is an instructive one, and I hope we shall all benefit by the observation we have given to it.

NO. 5.—*A Fatal Case of Typhoid Fever, with Maculæ, Diarrhœa, Grumous stools, &c.; complicated with Ulceration of the Cæcum, and Abscess of the Liver.* By W. N. CHIPPERFIELD, Acting Physician, General Hospital.

C. G., aged 55 years, a retired Military officer; residence in India 28 years. Habits, unknown; temperament, nervo-sanguine; habit of body, somewhat spare.

2nd December 1865.—Was sent for to visit this officer at 9 P.M. yesterday. The Apothecary on duty informed me that he arrived in a palanquin about an hour previously, accompanied by his butler and several servants, who said that he had been suffering from a low fever for about twelve days, whilst journeying from Pondicherry to Madras. It was also stated that he had diarrhœa, for which he was taking Port-wine. He was in a very dirty state when admitted, but had been cleaned and put to bed. I found him in a very low state, with a soft, weak pulse of 120. Tongue dry, small, contracted, pointed and covered with a thick brownish black fur; no sordes on teeth, gums, or

lips; skin hot and dry, very palid. Did not reply to questions readily, but spoke cheerfully, and said he wished he could but reach Madras, where Binny and Co. would take care of him. Nates and loins covered with small ulcerations grouped into large patches, bed sores, in fact; probably produced by the jolting in a palanquin upon soiled linen. Hepatic dulness much increased upwards. Considerable fulness in the right lumbar and iliac regions, where there is great tenderness on slight pressure. On the thorax and upper part of abdomen, there are about twenty rose-coloured elevated spots with a few dark petechiæ and some minute nævi.

The butler states that his master has been in bad health for the last three years, and that he was lately much distressed at the death of a son. Is quite sure that the present illness commenced about two weeks since, and that he left Pondicherry because he did not like to be under French treatment.

Ordered small quantities of chicken broth at short intervals. Sherry one ounce every two hours. Simple dressing to nates, and arrack lotion to the loins.

This morning I find he has had no sleep; has no delirium, but speaks incoherently when first roused. Very lethargic, but when his attention is kept fixed answers somewhat cheerfully, saying he is better and quite comfortable. Has had four stools of a grumous appearance.

Continue.

5 P.M.—At 3 P.M. the skin became clammy, with a blue tinge about face and hands. The skin is now warm. Pulse very feeble. Replies to questions cheerfully, but not readily. Requires rousing. Bowels moved three times, liquid feculence of coffee-grounds appearance.

Continue all.

℞ Acidi Nitro-Hydrochlor. ♏ iii.
Tr. Aurantii ʒ ss.
Aquæ Font. ℥iss. every 4th hour.

3*rd*.—Very restless all night, but has slept a little this morning. When roused says he has had a very good night, and is much better. Constantly calls for wine, but retains it in the mouth for a short time and then spits it out. Pulse small, feeble, 128; tongue almost black, but not so dry; bowels moved thrice, stools same, has passed some urine. A few fresh spots have appeared upon the front of thorax.

Continue.

5 P.M.—No improvement. Very great abdominal tenderness evinced by shrinking when touched. Says he has no pain, and is much better. Diarrhœa going on. Spits out his medicine and broth, but takes his wine.

Continue.

4th.—Is much in the same state. Very restless last night. Bowels moved copiously five times, evacutions of a dark grumous character. Swallows with some difficulty, very disinclined to speak. No delirium. Pulse very feeble, 135; tongue dark-brown, but moist.

Continue Broth and Wine.
℞ Sp. Ammon. Aromat. ʒss.
Decocti Cinchonæ ℥iss. *M.*
ft. Haust. now and at 3 P. M.

Arrack lotion to loins, simple dressing to nates.

Vespere.—Patient gradually sinking. Expression of countenance haggard. Lower extremities dry and hot, but arms, hands, and fingers shrivelled, cold, and clammy. Answers questions after two or three repetitions, but with much hesitation. Pulse very feeble, fluttering; tongue brown and again dry; abdomen full, but not tympanitie, very tender over ascending colon.

Omit all but the Wine.

11½ P.M.—Patient became collapsed about half an hour ago, and has just expired.

Autopsy, *5th,* 8 A. M.—Body spare, muscles small, some sugillation on posterior and lateral parts of trunk.

Head.—Not examined.

Thorax.—Muscles of a deep red color. Upon raising the sternum, the pericardium is seen to have a considerable deposit of adipose tissue between its layers, the heart has also a thick covering of fat on its anterior aspect. Right ventricle contains a large, soft, colourless clot, extending an inch into pulmonary artery; walls of left ventricle very thick, cavity diminished (concentric hypertrophy); valves healthy.

Lungs.—Right pushed upwards by ascent of the convex surface of liver, but a thin border of lung overlaps the liver in front, down to 8th rib. Substance of lung quite healthy, slight hypostatic congestion.

Abdomen.—Thick layer of fat in parieties. Upon opening the peritoneum, the viscera are at once brought into view,

the great omentum being drawn up under the diaphragm to the upper part of liver. It is well laden with fat, and its border is congested—of a rosy hue—there is no adhesion to the liver.

Stomach, healthy. Upon removing the small intestines and laying them open, Peyer's patches in the ileum are seen to be prominent and rough, and in a few places ulcerated. Along the line of attachment of the mesentery, the mucous coat is thickened and roughened by a deposit of grayish matter, punctated with black dots—this extends for 8 or 9 inches from the colic extremity of the ileum. At the inferior part of the cæcum, there is a patch of the size of a rupee, of a dark livid colour, and, upon handling it, a clot of blood is extruded, leaving a ragged ulcer, the size of a sixpence. Two inches higher a longer patch of dark colour exists. Upon laying the cæcum open, there are seen two ulcers, one smaller and round and perforated, corresponding to the point from whence the clot of blood was extruded, the other, about 3 inches long and half an inch broad, extending across the bowel, and covered with a clot and slough. Liver enlarged both upwards and downwards. No adhesions, several small soft prominences on both lobes. Upon attempting to remove the organ, a large abcess in the right lobe burst, giving exit to upwards of a pint of ill-formed pus; the organ throughout studded with small depôts of pus, thick and yellow.

There was no effusion into the peritoneal cavity. No adhesions nor other sign of peritonitis.

Remarks made to the Clinical Class.

2nd December.—There appears to me no doubt that this patient is suffering from true typhoid fever, I mean that specific disease which is attended by lesions of the solitary glands of the intestines, more especially of the aggregated patches named after Peyer. All his symptoms point to this. The rose-coloured circular spots disappearing on pressure, and returning when the pressure is removed, although not very numerous, are completely diagnostic. In all probality, we shall find more of them to-morrow. The stools, too, are somewhat characteristic; that dark, reddish brown colour they have, is due to admixture of blood. It is unfortunate that our patient is brought to us in such an advanced stage of his disease, and that we have so imperfect a history of

him. His servant says he has been very much out of health for three years, but is positive that the present disease is not of more than two weeks' standing. You will notice, if you please, that our patient continues in a delirious state, that he is constantly muttering to himself, and if you suddenly take his wrist in your hand, you find a good deal of tremor of the muscles, though he cannot be said to have true subsultus tendinum.

The prognosis is very unfavorable. I do not observe a single symptom which may be looked upon as favorable. Look at his decubitus, not only supine, but with a tendency to slip down in bed, showing utter prostration of nervous and muscular power. Another unfavorable sign is the temperature of his skin, it is a little less this morning than it was last night, but it is still high. And another symptom there is which is of grave import, viz., the scattered petechiæ which we observed upon the thorax and abdomen. Don't mistake the small nævi under the right nipple for petechiæ, the flea-bite-like spots which I allude to do not disappear on pressure, they are minute local hæmorrhages, and betoken both altered blood and weakened capillaries.

Now, I do not say that this gentleman has not some disease, evidence of which we are not in a position to obtain. He is too ill to be accurately examined, but the space of hepatic dulness is much increased upwards, and there is so much tenderness and gurgling over his ascending colon, that I do not like handling him. However, we must come to the conclusion that we have now immediately to deal with a case of true typhoid fever, and that our patient is not simply in what is called a typhoid condition as the result of pre-existing inflammation. I fear we shall soon have an opportunity of verifying this diagnosis by post-mortem inspection.

5th.—The post-mortem examination shows what I expected to find, and somewhat more. The appearance of Peyer's patches is characteristic of typhoid fever. You see they are elevated, and many of them ulcerated. But, besides this, we have two large ulcers in the cæcum, one of which has passed completely through the coats of the bowel, but we have no extravasation, because a firm clot closed the opening. The large abscess in the liver is probably the result of chronic inflammation, but the smaller depôts of pus, not larger than a bean, are most likely the result of a

kind of embolism, the conveyance of pus-cells or detritus of some kind into the mesentric veins, and their arrest in the small capillaries of the hepatic lobular plexuses. Had our patient not succumbed as he did by asthenia, in all probability he would very shortly have died from perforation of the cæcum, for we could not expect that the occluding clot would have remained *in situ* much longer; a very little motion of the bowels must have caused its extrusion.

It has been supposed, nay asserted, that typhus and typhoid fever never occur in India. This is a great mistake. Many cases have been recorded in the "Indian Annals of Medical Science," and also by Doctors Ranking and Cornish, in the "Madras Quarterly Medical Journal." All we can say is, that they are rare in our Presidency, compared to the frequency with which they occur in temperate climates.

[ETEOROLOGICAL RESULTS *from the Madras Observatory Register, for the month of January,* 1865.

...... to 32°.	Standard Thermometers. Observed Extremes. Maxim.	Minim.	Daily Means. Dry.	Wet.	Percentage of humidity.	Wind. Prevailing direction.	Daily velocity.	Depth of rain.	GENERAL REMARKS.
..hes.	°	°	°	°	per cent.		Mls.	Ins.	
·042	78·9	66·1	73·5	65·8	67	N. N. E.	176	....	Fine.
·051	78·9	66·8	72·3	67·1	77	N. N. E.	138	....	Light flying clouds.
·051	79·4	66·9	74·2	67·8	73	N. N. E.	201	....	Chiefly fine.
·086	79·2	67·3	74·4	66·0	65	N. N. E.	202	....	Flying clouds.
·068	76·2	67·8	73·2	68·9	81	N. by E.	182	0·20	Overcast. Rain from 5 to 7 A.M.
·068	80·4	71·4	74·5	67·9	72	N.E. by E.	236	....	Cloudy.
·026	79·9	67·4	73·1	68·7	80	N.E.byE.	156	....	Flying clouds, clear night
·023	79·4	66·5	73·9	69·6	81	N.E.	132	....	Fine.
·037	80·2	69·0	74·9	69·2	75	N. N. E.	214	....	Do.
·041	79·5	67·5	74·7	68·6	74	N.E.byN.	189	....	Light clouds.
·045	80·4	68·0	74·8	68·6	74	N.E.byN.	113	....	Fine, with passing clouds.
·047	80·4	67·9	74·4	69·1	77	N.E.byE.	105	....	Do.
·070	80·1	66·9	74·3	68·1	73	E. N. E.	133	....	Fine.
·086	79·8	67·8	74·6	67·3	69	N. E.	230	....	Fine, with passing clouds.
·091	79·8	66·8	74·4	66·7	67	N.E.by N	250	....	Pasing clouds.
·105	80·4	67·0	74·9	68·4	72	N. N. E.	208	....	Chiefly overcast.
·080	81·0	74·4	76·3	69·0	70	N.E.byN.	256	....	Cloudy.
·109	80·1	73·0	76·3	68·8	69	N. E.	233	....	Flying clouds.
·081	81·0	72·1	75·8	68·2	69	N.E.byE.	213	....	Fine, with passing clouds.
·080	79·9	67·3	74·6	66·2	65	N. E.	186	....	Chiefly fine.
·064	79·7	66·3	72·9	65·9	66	N.E.byN	176	....	Passing clouds.
.096	79·1	65·9	73·7	66·0	67	N.E·byN	187	....	Fine, with passing clouds.
·104	79·8	65·9	72·1	66·8	77	N. E.	160	....	Chiefly fine. [clouds.
·086	79·5	66·4	73·9	68·5	76	N. E.	156	....	Chiefly fine with passing
·070	80·7	66·3	73·6	69·2	80	N. E.	118	....	Chiefly fine.
·024	80·2	66·4	72·7	68·2	80	N E.byE.	112	....	Fine.
·971	79·8	64·5	71·8	67·5	81	E.	84	....	Do.
·976	79·8	63·3	70·9	67·0	82	E. S. E.	72	....	Fine after sunrise.
·997	80·8	64·3	74·2	70·4	84	E. S. E.	117	....	Fine.
·990	81·0	67·8	75·4	70·0	77	E.S.E.	119	....	
·967	81·9	67·0	74·9	70·3	81	S.E.byE.	145	....	Light haze.

Standard Barometer and Thermometers are read at 10 A.M., 4 P.M., and 10 P.M.; Daily Means are obtained by the application of hourly corrections, deduced from years' observations. The Cistern of the Barometer is 27 feet above the level of the d the *Receiver of the Rain-gauge* is three feet from the ground. The Wind and *istered are for the current civil day*—from midnight to midnight.

N. R. POGSON, *Government Astronomer.*

METEOROLOGICAL RESULTS *from the Madras Observatory Register, for the month of February,* 1865.

1865.	Barometer reduced to 32°.	Standard Thermometers. Observed Extremes. Maxim.	Minim.	Daily Means. Dry.	Wet.	Percentage of humidity.	Wind. Prevailing direction.	Daily velocity.	Depth of rain.	GENERAL REMARKS.
	Inches.	°	°	°	°	per cent.		Mls.	Ins.	
1st	30·016	82·4	68·8	76·4	71·2	78	S.E.byE.	134	.....	Hazy clouds.
2nd	30·028	81·9	70·7	76·5	71·3	78	E.	155	....	Cloudy.
3rd	30·037	82·7	72·1	77·5	72·2	78	E. N. E.	184	....	Chiefly cloudy.
4th	30·019	81·7	68·9	75·2	70·7	81	N.E·byE	104	....	Passing clouds.
5th	29·996	81·9	68·6	75·2	70·3	79	E. by N.	94	.....	Fine, with passing clouds.
6th	30·000	82.4	68·8	76·4	71·2	78	E.	101	....	Do.
7th	30·001	82·2	69·2	76·6	70·7	75	E. by N.	110	....	Passing clouds.
8th	29·936	82·6	68·6	75·5	70·1	77	E. by S.	106	......	Nearly fine.
9th	29·909	82·4	68·8	76·3	70·5	76	S. E.	149	.....	Fine.
10th	29·885	83·9	70·8	77·0	71·2	76	S. S. E.	185	....	Cloudy morning, fine day.
11th	29·868	83·9	68·7	78·0	73·0	79	S.	180	....	Fine.
12th	29·908	85·6	73·6	79·2	74·7	81	S. E.	170	....	Fine day, cloudy night.
13th	29·975	84·2	73·2	78·5	73·3	78	E. S. E.	170	....	Clou dy.
14th	30·009	83·8	74·2	78·5	72·1	74	E.	159	....	Morning cloudy, day fine.
15th	30·044	85·6	74·5	79·1	72·6	73	E.	203	....	Fine.
16th	30·071	83·5	75.2	78·6	71·0	70	E.	193	....	Do.
17th	30·024	83·8	74·1	78·3	70·4	68	E.	139	....	Chiefly fine.
18th	29·941	84·3	70·0	77·4	71·2	74	E. S. E.	102	....	Fine.
19th	29·994	85·5	69·8	78·3	71·8	73	E. S. E.	125	.....	Do.
20th	29·999	85·0	69·8	76·9	71·2	76	E. S. E.	80	....	Do.
21st	29·981	84·8	68·6	75·2	69·5	73	S. E.	91	....	Do.
22nd	29·967	84·4	67·6	76·0	71·0	79	S. E.	94	....	Do.
23rd	29·986	83·4	67·8	76·0	71·4	81	S. E.	118	....	Do.
24th	29·976	84·3	67·6	77·4	71·8	77	S.E.byE.	114	....	Passing clouds.
25th	29·948	86·4	72·0	79·7	74·0	77	S.E.byS.	175	....	Fine, with passing clouds.
26th	29·943	86·4	73·6	80·1	74·4	77	S. E.	173	....	Chiefly fine.
27th	29·990	86·2	73·7	80.0	73·6	74	S. E.	183	... ...	Fine.
28th	30·034	84·9	72·2	78·8	72·5	74	E. by S.	109	. .....	Fine.

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N. R. POGSON, Government Astronomer.

METEOROLOGICAL RESULTS *from the Madras Observatory Register, for the month of March,* 1865.

Barometer reduced to 32°.	Standard Thermometers. Observed Extremes. Maxim.	Minim.	Daily Means. Dry.	Wet.	Percentage of humidity.	Wind. Prevailing direction.	Daily velocity.	Depth of rain.	GENERAL REMARKS.
nches.	°	°	°	°	per cent.		Mls.	Ins.	
30·017	85·1	73·8	79·0	72·1	72	E.	138	......	Passing clouds.
29·975	84·8	73·1	79·5	72·1	70	E. S. E.	126	......	Fine, with passing clouds.
29·936	84·9	70·6	78·3	71·5	73	E. S. E.	132	......	Chiefly fine.
29·916	85·5	68·8	78·7	73·2	77	S.E.by S.	169	......	Fine.
29·919	85·8	68·6	79·4	73·8	77	S.E.by S.	201	......	Do.
29·913	85·9	71·6	79·2	71·3	70	S.E.by S.	184	......	Do.
29·901	86·3	70·1	79·9	73·0	72	S. E.	217	......	Do.
29·885	88·0	74·7	81·1	75·5	78	S.E.by S.	237	......	Flying clouds.
29·904	87·3	78·6	81·2	75·2	76	E. S. E.	243	......	Heavy passing clouds.
29·967	86·2	74·1	80·5	73·7	73	E. S. E.	150	......	Passing clouds.
29·982	87·4	72·7	80·4	73·2	71	E. S. E.	108	......	Nearly fine.
29·975	86·6	73·6	80·1	74·1	76	E. S. E.	117	......	Fine.
29·933	87·0	73·4	80·1	73·8	75	E. S. E.	122	......	Fine with, passing clouds.
29·958	86·5	75·7	81·0	73·5	70	E. by S.	154	......	Do. do
29·988	87·3	72·8	80·1	73·3	73	E. N. E.	175	......	Passing clouds.
30·029	86·4	72·0	79·4	73·5	76	E. N. E.	104	......	Cloudy and hazy.
30·026	86·2	72·6	79·5	72·8	73	E. N. E.	140	......	Hazy clouds.
29·990	85·6	71·9	79·2	72·4	73	E. N. E.	122	......	Do.
29·974	85·3	72·2	79·3	72·3	72	N.E.byE	156	......	Passing clouds.
30·002	86·0	72·2	79·7	74·5	79	E. N. E.	118	......	Cloudy.
29·990	87·4	76·1	80·9	74·3	74	E.	123	......	Cloudy morning, fine day.
29·960	86·5	71·6	79·9	73·7	75	E.	104	......	Fine.
29·940	86·3	71·8	79·0	73·7	78	E. S. E.	110	......	Nearly fine.
29·915	88·3	71·6	79·8	74·2	77	S.E.by S.	87	......	Fine.
29·936	88·8	71·9	80·3	74·0	77	E. by. S.	110	......	Do.
29·942	89·8	71.7	80·7	74·0	73	S.E. by S.	159	......	Thin clouds.
29·948	87·6	71·8	81·2	74·7	74	S.E.byE.	122	......	Passing clouds : fine night.
29·962	88·8	74·7	82·0	76·1	76	S. E.	189	......	Chiefly fine.
29·939	90·0	75·7	83·4	75·7	71	S. E. by S.	205	......	Do.
29·981	90·3	73·6	82·4	74·9	71	S. E.	154	......	Fine.
29·973	89·6	74·3	83·3	76·6	75	S. E.	178	......	Hazy.

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N. R. POGSON, *Government Astronomer.*

METEOROLOGICAL RESULTS *from the Madras Observatory Register, for the month of April,* 1865.

1865.	Barometer reduced to 32°.	Standard Thermometers. Observed Extremes. Maxim.	Standard Thermometers. Observed Extremes. Minim.	Standard Thermometers. Daily Means. Dry.	Standard Thermometers. Daily Means. Wet.	Percentage of humidity.	Wind. Prevailing direction.	Wind. Daily velocity.	Depth of rain.	GENERAL REMARKS.
	Inches	°	°	°	°	Per cent.		Mls.	Ins.	
1st	29·967	90·7	78·6	84·5	78·1	76	S. E	146	......	Hazy clouds.
2nd	29·957	91·2	76·7	84·6	77·8	75	S.E.byS.	173	......	Do.
3rd	29·959	91·3	77·9	84·3	77·7	75	S.E.byS.	191	......	Cloudy.
4th	29·950	91·2	77·0	84·4	78·0	76	S. S. E.	199	......	Fine, with passing clouds.
5th	29·918	94·5	76·6	84·7	77·4	73	S. by E.	239	......	Chiefly fine.
6th	29·906	92·5	77·7	84·2	77·0	73	S. S. E.	228	......	Do.
7th	29·896	90·9	77·0	84·0	78·2	78	S. S. E.	202	......	Fine.
8th	29·888	92·2	77·5	84·5	78·3	76	S. S. E.	204	......	Do.
9th	29·873	93·4	77·6	84·9	78·3	75	S. by E.	207	......	Chiefly fine.
10th	29·863	93·4	77·9	85·1	78·0	74	S. S. E.	204	......	Fine.
11th	29·866	92·3	76·9	84·2	76·7	71	S. S. E.	195	......	Do.
12th	29·912	90·6	74·2	83·6	75·9	71	S.E.byS.	122	......	Do.
13th	29·943	91·2	76·9	84·4	77·6	74	S.E.byE.	110	......	Passing clouds.
14th	29·911	91·3	77·7	84·7	78·3	76	E. S. E.	150	......	Hazy and cloudy.
15th	29·890	92·0	78·8	85·5	78·2	73	S.E.	136	......	Fine day.
16th	29·795	93·2	78·0	84·9	77·7	73	S. S. E.	186	......	Cloudy.
17th	29·768	93·3	80·2	86·1	78·7	73	S. S. E.	240	......	Chiefly overcast.
18th	29·848	92·9	78·9	86·5	77·1	66	S. S. E.	204	......	Passing clouds.
19th	29·879	89·5	79·7	84·9	78·2	75	E. S. E.	117	......	Chiefly overcast.
20th	29·806	92·0	78·4	84·3	78·1	76	S.E.	147	0·02	Passing clouds.
21st	29·808	93·3	78·8	85·7	78·9	75	S.E.	174	.....	Do.
22nd	29·828	92·2	80·8	84·4	79·4	77	S.E.	206	......	Fine, with passing clouds.
23rd	29·803	93·4	80·5	85·0	70·0	77	S.E.byS.	228	......	Light clouds.
24th	29·775	95·5	80·8	87·1	80·0	74	S. S. E.	209	......	Passing clouds.
25th	29·757	94·3	81·3	88·1	80·2	71	S. by. E	238	......	Thick haze.
26th	29·781	94·5	80·2	86·7	78·2	68	S. S. E.	184	......	Passing clouds.
27th	29·801	92·9	81·4	86·9	73·3	72	S.E.	221	......	Do
28th	29·770	94·6	78·9	86·4	77·9	68	S.E.	141	.....	Light hazy clouds.
29th	29·686	94·6	80·5	87·4	80·7	75	S.E.	173	.....	Fine.
30th	29·639	96·2	82·7	89·7	80·8	68	S. by E.	252	......	Do.

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N. R. POGSON, Government Astronomer.

METEOROLOGICAL RESULTS *from the Madras Observatory Register, for the month of May,* 1865.

Barometer reduced to 32°.	Standard Thermometers. Observed extremes. Maxim.	Standard Thermometers. Observed extremes. Minim.	Standard Thermometers. Daily means. Dry.	Standard Thermometers. Daily means. Wet.	Percentage of humidity.	Wind. Prevailing direction.	Wind. Daily velocity.	Depth of rain.	GENERAL REMARKS.
nches.	°	°	°	°	per cent.		Mls.	Ins.	
29·702	94·7	82 9	88·6	81·0	72	S. S. E.	278	....	Fine.
29·763	96·0	82·0	88·2	80·1	71	S. E. by S.	232	....	Fine, with passing clouds.
29·771	95·4	82·6	89·0	80·4	69	S. by E.	318	....	Fine day, cloudy night.
29·781	101·6	82·9	88·2	77·5	62	S. S. W.	341	....	Cloudy, with high wind at night
29·764	103·5	82·7	89·2	78·7	63	S. S. W.	307	....	Frequently clouded.
29·788	103·0	84·9	88·2	78·2	64	S. S. W.	266	0·07	Cloudy, with fine intervals.
29·804	100·8	81·0	86·7	77·9	68	S.W.byS.	226	0·02	Chiefly clouded.
29·738	102·9	80·6	88·1	78·2	64	S.W.byS.	297	....	Fine, with passing clouds.
29·750	102·8	82·7	88·9	77·7	61	S. S. W.	244	....	Fine.
29·763	101·1	83·4	89·6	77·7	59	S. S. W.	261	....	Do.
29·748	100·8	81·2	89·7	77·0	57	S. by E.	236	......	Do.
29·775	98·4	82·6	91·3	77·7	55	S.	205	....	Passing clouds.
29 786	95·5	80·9	88·1	77·7	63	S. W.	284	....	Chiefly cloudy.
29·767	95·0	81·6	88·1	78·2	64	S.	213	....	Chiefly fine.
29·717	95·2	81·4	87·5	80·5	74	S. S. E.	237	....	Fine.
29·753	94·4	81·9	88·0	77·4	62	S.W.byS.	230	....	Light clouds.
29·791	96·6	80·8	88·5	79·5	68	S. by W.	183	....	Do.
29·803	95·4	82·9	88·9	79·1	66	S. S. E.	250	....	Frequent clouds.
29·804	95·3	82·5	87·4	79·4	71	S. S. E.	223	......	Chiefly cloudy.
29·791	93·6	82·8	85·2	77·9	73	S. by E.	196	0·02	Nearly overcast.
29·762	93·6	80·2	86·8	79·2	72	S. E.	131	....	Passing clouds, fine night.
29·779	95·9	81·4	87·7	79·6	71	S. S. E.	189	....	Passing clouds.
29·795	90·8	82·7	85·4	79·8	79	S. by E.	219	0·13	Passing clouds.
29·751	95·4	80·2	84·4	77·5	73	S. by W.	221	0·12	Fine morning cloudy day: a light storm passed over towards the south about 1 P.M.
29·686	99·2	78·8	87 3	79·5	72	S. S. W.	260	....	Chiefly clouded.
29·659	99·1	81·5	90·0	78·7	61	S. by. W.	213	....	Passing clouds.
29·669	103·4	82·4	86·1	78·2	70	S. W. by S.	263	0·02	Passing clouds. Light shower about 3 P.M.
29·676	103·6	79·7	88·6	81·3	73	S. W. by S.	318	....	Light clouds.
29·650	100·5	82·8	90·3	78·7	60	S. S. W.	274	....	Hazy.
29·619	97·3	82·9	87·8	79·4	70	S.	359	....	Thick haze.
29·606	96·1	82·2	86·4	79·1	73	S. by W.	303	.....	Hazy clouds.

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N. R. POGSON, Government Astronomer

METEOROLOGICAL RESULTS *from the Madras Observatory Register, for the month of June,* 1865.

1865.	Barometer reduced to 32°.	Standard Thermometers. Observed extremes. Maxim.	Standard Thermometers. Observed extremes. Minim.	Standard Thermometers. Daily means. Dry.	Standard Thermometers. Daily means. Wet.	Percentage of humidity.	Wind. Prevailing direction.	Wind. Daily velocity.	Depth of rain.	GENERAL REMARKS.
	Inches.	°	°	°	°	per cent.		Mls.	Ins.	
1st	29·592	94·0	80·7	87·4	79·0	70	S. by E.	218	......	Passing clouds.
2nd	29·647	94·7	82·1	86·8	79·0	72	S. S. E.	208	0·05	Fine before sunrise: passing clouds after.
3rd	29·666	94·3	82·0	87·8	80·6	73	S. S. E.	204	......	Chiefly overcast.
4th	29·711	97·7	82·1	88·1	79·6	69	S. S. E.	253	......	Fine, with passing clouds.
5th	29·693	102·5	82·2	89·1	78·8	64	S.	213	......	Do. do.
6th	29·709	102·7	81·8	88·6	78·9	66	S. S. W.	166	......	Chiefly fine.
7th	29·746	99·7	82·6	87·7	78·6	68	S.W.by S	188	......	Cloudy.
8th	29·755	99·5	81·1	87·5	76·4	61	S.W.by S	207	......	Do.
9th	29·692	100·9	81·7	90·5	76·3	53	W.by S.	268	......	Chiefly overcast.
10th	29·692	102·0	84·2	91·2	77·8	55	W.	255	0·06	Nearly do.
11th	29·764	102·3	83·8	88·9	78·8	65	SW by W	220	......	Cloudy.
12th	29·785	101·3	82·0	89·9	79·0	62	SW by W	270	......	Heavy clouds.
13th	29·727	101·8	83·8	88·4	78·0	63	SW by W	256	0·04	Chiefly clouded.
14th	29·703	100·8	83·0	88·2	77·6	62	S.W.	239	0·04	Cloudy.
15th	29·719	99·6	83·4	87·2	76·7	62	S.W.	261	0·14	Chiefly overcast.
16th	29·734	97·0	80·5	89·1	78·5	63	S.W.	252	......	Passing clouds.
17th	29·708	100·2	83·5	89·0	78·3	63	S.W.	251	......	Cloudy.
18th	29·699	101·8	83·5	90·6	77·3	55	S.W.byS.	288	......	Do.
19th	29·728	101·2	82·7	88·9	78·1	62	S. S. W.	277	......	Passing clouds.
20th	29·767	101·5	82·7	89·0	78·2	62	S.	246	......	Fine, with passing clouds.
21st	29·764	98·9	82·5	90·0	78·9	62	S. S. E.	195	0·28	Do. Rain at 11½ P. M.
22nd	29·762	101·9	82·6	88·5	78·3	64	S.S.W.	223	......	Frequently clouded.
23rd	29·746	100·2	80·8	89·7	77·9	60	S.	251	......	Light clouds.
24th	29·729	99·7	84·7	89·7	75·8	53	S. W.	285	......	Cloudy.
25th	29·721	103·1	82·7	85·7	77·6	70	S.W.byS	239	0·52	Cloudy. Rain at 4, 7, and 11 P. M.
26th	29·746	98·9	80·3	85·3	77·2	70	S. W.	223	0·17	Chiefly overcast. Rain about 6 P. M.
27th	29·697	99·3	81·6	88·9	75·4	54	W.S.W.	274	0·02	Do. Shower at 6½ P. M.
28th	29·679	92·5	83·4	86·5	75·1	60	SW by W	186	0·03	Overcast. Shower at 6½ P. M.
29th	29·625	98·8	80·8	88·2	74·5	54	W. by S.	288	.....	Do. [5 P. M.
30th	29 648	96·5	83·4	88·4	74·8	54	W. by S.	324	0·05	Chiefly overcast. Shower at

The Standard Barometer and Thermometers are read at 10 A. M., 4 P. M., and 10 P. M., and the Daily Means are obtained by the application of hourly corrections, deduced from twenty years' observations. The Cistern of the Barometer is 27 feet above the level of the Sea, and the Receiver of the Rain-gauge is three feet from the ground. The Wind and Rain registered are for the current civil day—from midnight to midnight.

N. R. POGSON, Government Astronomer.

Meteorological Results *from the Madras Observatory Register, for the month of July,* 1865.

Barometer reduced to 32°.	Standard Thermometers. Observed extremes. Maxim.	Minim.	Daily means. Dry.	Wet.	Percentage of humidity.	Wind. Prevailing direction.	Daily velocity.	Depth of rain.	General Remarks.
Inches.	°	°	°	°	per cent.		Mls.	Ins.	
29·658	99·7	80·1	91·0	74·9	48	W.S.W.	332	......	Cloudy. [5¾ P. M.
29·654	101·2	83·9	90·2	75·9	52	S. W.	287	0·03	Passing clouds. Shower at
29·706	96·5	82·0	89·1	75·3	53	SW by W	220	......	Cloudy.
29·704	97·6	82·6	88·3	74·5	53	SW by W	304	......	Overcast.
29·715	98·3	80·8	88·2	73·8	51	SW by W	309	......	Do.
29·749	97·0	81·1	88·9	75·6	54	SW by S.	259	......	Chiefly overcast.
29·767	100·1	82·5	89·7	75·3	52	SW by W	349	......	Do.
29 765	98·8	76·2	84·1	76·0	70	S.W.	203	0·87	Overcast. Rain at intervals between 5 and 9½ P. M.
29·768	92·5	76·8	83·7	76·7	73	S.W.	199	......	Overcast.
29·788	92·7	78·8	83·8	75·5	69	S. S. W	187	0·03	Do. Shower at 7¼ P.M.
29·766	97·8	78·3	83·4	76·3	73	S. by W.	206	0·45	Cloudy. Rain between 6¾ and 7¼ P. M.
29·728	95·4	78·9	86·5	77·3	66	S. S. W.	251	......	Chiefly clouded.
29·734	95·2	79·8	85·0	77·2	71	SW by S	239	......	Do.
29·743	98·3	78·7	86·1	78·6	72	S. S. W.	238	......	Passing clouds.
29·744	100·0	79·2	87·0	78·2	68	SW by S	222	0·04	Cloudy. Showers about 4½
29·740	99·5	80·6	89·9	79·4	63	SW by W	229	......	Do. [and 10½ P.M.
29·745	100·8	81·7	88·5	75·8	57	W. S. W.	272	0·16	Passing clouds. Rain at 8½ P. M.
29·737	100·2	80·8	88·0	75·6	57	SW by W	233	0·02	Do. Showers at 6½ and 10½ P. M.
29·697	99·0	81·6	85·5	76·5	67	SW by S	244	0·01	Do. Light shower at 3¼ P. M.
29·722	98·5	82·1	86·6	77·4	66	S.S. W.	228	0·17	Heavy passing clouds. Rain from 4½ to 5¾ P. M.
29·725	93·2	77·9	85·0	78·6	76	S. by W.	202	0·14	Cloudy. Rain from 1 to 2 A. M.
29·713	95·9	77·7	85·8	78·3	72	S.W.by S.	187	......	Passing clouds.
29·760	93·0	78·3	85·8	78·7	74	S. S. W.	126	0·01	Do. Light shower at 3½ A. M.
29·789	96·5	79·6	83·8	78·5	79	S. by E.	172	0·15	Fine, with passing clouds. Rain at 3¼ P. M.
29·823	95·4	77·8	85·4	77·4	70	NW by N	225	......	Cloudy.
29·794	94·0	77·9	86·0	78·0	70	S. by E.	156	......	Fine, with passing clouds.
29·791	92·1	80·8	86·2	77·8	69	S.E. by S.	142	......	Chiefly fine.
29·818	94·0	80·2	86·2	77·9	69	S. by E.	165	......	Light passing clouds.
29·819	92·0	79·7	85·8	79·1	75	S. E.	162	......	Fine, with passing clouds.
29·781	91·7	79·3	85·7	78·3	73	S. E.	189	......	Chiefly fine.
29·759	92·4	81·5	86·7	78·0	68	S. S. E.	229	......	Do.

he Standard Barometer and Thermometers are read at 10 A.M., 4 P.M., and 10 P.M., e Daily Means are obtained by the application of hourly corrections, deduced from y years' observations. The Cistern of the Barometer is 27 feet above the level of the nd the Receiver *of the Rain-gauge is three* feet from the ground. The Wind and *egistered are for the current civil day*—from midnight to midnight.

N. R. POGSON, Government Astrono

METEOROLOGICAL RESULTS *from the Madras Observatory Register, for the month of August,* 1865.

1865.	Barometer reduced to 32	Standard Thermometers. Observed extremes. Maxim.	Standard Thermometers. Observed extremes. Minim.	Standard Thermometers. Daily means. Dry.	Standard Thermometers. Daily means. Wet.	Percentage of humidity.	Wind. Prevailing direction.	Wind. Daily velocity.	Depth of rain.	GENERAL REMARKS.
	Inches.	°	°	°	°	per cent.		Mls.	Ins.	
1st	29·715	94·6	79·8	84·9	78·5	76	S. by W.	187	.....	Passing clouds.
2nd	29·750	87·7	79·0	82·3	76·6	78	S.	70	.....	Chiefly overcast: stormy looking about 3½ P.M.
3rd	29·764	96·8	77·7	86·9	78·3	69	S. by E.	102	....	Fine, with passing clouds.
4th	29·788	93·1	78·5	84·4	77·0	72	S.	88	......	Chiefly cloudy.
5th	29·779	93·4	76·8	85·2	77·0	69	SW by W	142	0·16	Nearly overcast. Showers at 3¼ and 5¾ A.M.
6th	29·756	82·4	75·1	77·3	75·0	90	W. S.W.	107	1·25	Overcast. Rain between 4½ and 10 A.M., and from 2 to 4 P.M.
7th	29·731	88·5	76·9	80·8	77·3	86	S.W. by S.	92	0·12	Cloudy. Rain at 2½ A.M.
8th	29·743	89·2	76·5	81·7	77·4	83	S.W. by S	110	0·07	Overcast. Light rain from 8½ to 9½ A.M.
9th	29·716	93·3	76·8	79·1	76·3	89	SW by W.	118	0·79	Cloudy. Rain from 3¾ to 6¾ P.M.
10th	29·683	91·8	76·6	82·1	77·5	82	S. S. W.	129	0·34	Do. Rain from 8½ to 9¾ P.M.
11th	29·701	91·3	77·1	82·5	78·3	83	SW by W.	177	0·13	Do. Shower at 11¼ P.M.
12th	29·747	91·2	76·7	81·3	76·8	82	S. S. W.	165	0·52	Overcast. Drizzle from 2½ to 5 A.M. Rain from 6½ to 12 P.M.
13th	29·786	89·1	76·2	81·5	75·9	78	SW by W.	214	0·03	Overcast. Light rain between midnight and 3 A.M.
14th	29·761	81·1	76·2	77·9	73·9	83	W. S. W.	206	0·17	Overcast. Slow rain from midnight to 5 A.M. and at 10 P.M.
15th	29·738	87·2	76·0	82·2	75·3	73	S.W. by S.	213	0·07	Overcast. Slow rain before 4 A.M.
16th	29·799	89·3	74·9	81·4	76·3	80	SW by W	162	0·60	Overcast. Rain at 5½ A.M., 5¾ to 7¼, 8¼ and 10½ P.M. Heaviest about 6 P.M.
17th	29·838	92·2	76·3	81·9	76·8	80	S. S. W.	168	0·47	Cloudy. Heavy rain at 9½ P.M. Light ditto at 11¾ P.M.
18th	29·828	83·3	76·8	81·0	75·2	77	S.W. by S.	171	0·24	Overcast. Rain from midnight to 4 A.M., and at 11 A.M.
19th	29·755	91·8	77·6	84·1	76·0	70	S. W.	191	0·10	Chiefly overcast. Shower at 5¼ P.M.
20th	29·740	91·0	79·6	83·9	75·2	67	W. S. W.	216	....	Overcast.
21st	29·743	91·9	79·0	85·1	74·3	61	SW by W.	269	......	Cloudy.
22nd	29·717	91·6	78·3	85·8	73·8	58	W. S. W.	238	....	Do.
23rd	29·714	93·5	79·6	86·4	76·4	64	S. W.	219	....	Passing clouds.
24th	29·733	95·3	81·6	87·0	76·6	63	S. W.	259	....	Cloudy, with fine intervals.
25th	29·748	96·4	80·6	85·9	77·6	69	S.W. by S.	238	....	Fine, with passing clouds.
26th	29·736	96·6	80·0	84·7	76·9	71	S. W.	250	0·08	Do. Shower at 7 P.M.
27th	29·752	94·2	79·0	86·3	76·0	63	W. S. W.	222	... ...	Passing clouds.
28th	29·757	95·6	81·8	87·4	75·1	57	W. S. W.	203	....	Do.
29th	29·799	97·8	80·9	87·7	76·9	62	SW. by W	239	0·10	Do Showers at 5 and 7 P.M.
30th	29·797	94·4	77·4	88·4	75·2	69	SW by W.	202	1·80	Cloudy. Rain from 9¼ P.M. to midnight. A heavy thunderstorm 10 to 11 P.M.
31st	29·756	93·5	75·7	85·1	77·1	70	S.W. by S.	141	0·15	Rain till 1¼ A.M. Chiefly overcast.

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METEOROLOGICAL RESULTS *from the Madras Observatory Register, for the month of September*, 1865.

1865.	Barometer reduced to 32°.	Standard Thermometers.				Percentage of humidity.	Wind.		Depth of rain.	GENERAL REMARKS.
		Observed extremes.		Daily means.			Prevailing direction.	Daily velocity.		
		Maxim.	Minim.	Dry.	Wet.					
	Inches	°	°	°	°	per cent.		Mls.	Ins.	
1st	29·812	94·3	79·1	84·9	78·3	75	S. S. W.	180	......	Passing clouds.
2nd	29·831	91·4	78·7	84·9	78·5	76	S.	155	......	Do.
3rd	29·800	94·8	80·8	84·6	77·2	72	S.W. by S	204	......	Do.
4th	29·794	89·1	75·9	82·7	76·7	77	W. S. W.	190	0·23	Chiefly overcast. Rain at 2¾ and 3¾ A. M.
5th	29·776	90·5	77·1	83·4	77·6	78	S. S. W.	140	0·04	Chiefly overcast. Shower at 1¾ A. M.
6th	29·781	92·6	76·9	84·1	76·3	71	S.E. by S	143	......	Fine, with passing clouds.
7th	29·804	92·3	78·4	84·9	77·2	71	S. S. E.	149	......	Light clouds.
8th	29·772	92·2	78·5	85·1	75·3	65	S.W. by S	194	......	Do.
9th	29·732	92·3	77·9	84·1	74·8	65	S. W.	221	......	Chiefly overcast.
10th	29·739	92·5	78·5	86·2	74·7	59	S.W. by S	242	......	Cloudy.
11th	29·758	93·7	79·7	86·4	75·7	62	W.	239	......	Chiefly cloudy.
12th	29·750	95·6	79·5	87·2	74·6	56	SW by W	233	......	Fine, with passing clouds.
13th	29·768	94·3	79·4	87·1	74·8	57	S.W. by S	209	......	Light hazy clouds.
14th	29·763	95·2	78·8	84·6	77·1	71	S.S.E.	215	......	Passing clouds.
15th	29·774	93·5	79·7	85·6	76·7	67	S.S.E.	176	......	Chiefly cloudy.
16th	29·761	94·6	78·4	83·2	78·4	81	S. by E.	149	0·02	Chiefly overcast.
17th	29·758	88·0	79·4	82·9	72·9	63	W.S.W.	147	......	Overcast.
18th	29·760	93·4	79·6	84·5	74·2	62	W. N. W.	205	......	Chiefly overcast.
19th	29·772	94·8	77·2	84·9	74·7	62	N. W.	196	0·06	Do. shower at 9½ P. M.
20th	29·766	88·5	79·2	83·4	74·5	66	W.	204	0·02	Overcast.
21st	29·765	94·4	80·2	86·9	74·3	56	W.N.W.	153	......	Chiefly overcast.
22nd	29·773	94·0	79·9	85·0	75·5	65	N.N.E.	125	......	Passing clouds, clear night.
23rd	29·807	95·3	77·6	85·3	77·7	71	S.E. by S.	134	......	Fine, with passing clouds.
24th	29·830	94·5	77·8	83·0	78·0	80	S. S. E.	109	0·91	Passing clouds, rain from 1 to 2 P. M.
25th	29·849	91·0	78·8	84·9	78·9	77	S. S. E.	147	......	Chiefly fine.
26th	29·881	91·6	78·2	84·8	77·7	73	S. S. E.	166	......	Do.
27th	29·873	93·0	77·7	85·4	77·6	71	S. E.	109	......	Passing clouds.
28th	29·843	94·4	78·9	85·7	75·7	64	E. S. E.	114	......	Fine, with passing clouds.
29th	29·830	94·9	76·8	85·4	76·5	67	S.	142	.....	Do. do.
30th	29·838	94·8	75·5	85·4	76·9	68	S.	120	.....	Passing clouds.

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N. R. POGSON, Government Astronomer.

METEOROLOGICAL RESULTS *from the Madras Observatory Register, for the month of October,* 1865.

1865.	Barometer reduced to 32°.	Standard Thermometers. Observed extremes. Maxim.	Standard Thermometers. Observed extremes. Minim.	Standard Thermometers. Daily means. Dry.	Standard Thermometers. Daily means. Wet.	Percentage of humidity.	Wind. Prevailing direction.	Wind. Daily velocity.	Depth of rain.	GENERAL REMARKS.
	Inches.	°	°	°	°	per cent.		Mls.	Ins.	
1st	29·863	94·5	76·2	84·7	76·4	69	S. by E.	137	....	Passing clouds.
2nd	29·866	96·3	77·4	80·9	76·0	80	S.	145	0 21	Do. Rain about 4 P. M.
3rd	29·891	94·1	75·8	84·5	77·0	71	S. S. E.	126	....	Fine, with passing clouds.
4th	29·889	96·2	73·0	79·4	74·2	78	N.E.by E.	137	0·43	Ditto. Rain about 3¾ P. M.
5th	29·864	92·4	75·8	83·5	76·8	74	S.E.by S.	123	....	Passing clouds.
6th	29·835	93·0	78·4	84·4	76·0	69	S. E.	132	....	Light clouds.
7th	29·863	95·3	77·6	83·0	79·0	84	S. E.	128	....	Fine, with passing clouds.
8th	29·907	93·3	78·2	86·2	78·6	72	S. S. E.	165	....	Do.
9th	29·902	93·3	77·4	84·8	78·4	76	S. S. E.	129	....	Light clouds.
10th	29·905	91·0	78·6	85·2	77·3	70	S.E. by E.	99	....	Chiefly fine.
11th	29·908	89·1	76·4	83·6	76·6	73	E. by S.	114	....	Fine.
12th	29·912	89·7	75·9	84·2	76·3	70	E. by S.	109	....	Do.
13th	29 913	89·3	76·2	83·3	76·0	72	E.	105	....	Do.
14th	29·931	89·7	75·6	83·8	76·3	71	E. N. E.	159	....	Do.
15th	29·934	89·2	76·8	84·2	75·8	69	E. N. E.	135	....	Do.
16th	29·893	89·5	77·9	84·3	76·0	67	N.E.by E.	176	....	Fine, with passing clouds.
17th	29·882	89·5	77·5	84·5	74·9	64	N. E.	213	....	Do.
18th	29·902	89·0	77·1	83·6	74·1	64	N.E. by N	243	....	Light clouds.
19th	29·890	88·6	74·2	82·9	74·4	67	N.E. by E.	154	....	Cloudy.
20th	29·888	87·1	77·4	82·4	74·4	69	N. E.	224	0·22	Overcast. Rain from 5 to 6¼ P. M.
21st	29·875	83·5	76·0	78·8	76·4	89	N. E. by N	112	0·70	Do. Frequent showers before sunrise. Rain at 10 A.M. & 11¼ A.M.
22nd	29·874	86·6	76·6	82·7	77·3	79	N. E.	122	....	Cloudy.
23rd	29·865	86·7	77·2	82·8	77·3	78	E. by N.	101	0·09	Light clouds. Shower at 5½ P.M.
24th	29·866	87·3	78·5	83·0	77·4	78	E. by S.	104	0·01	Passing clouds.
25th	29·865	87·3	77·9	83 5	77·2	76	E.	123	0·05	Do. Rain after 11¼ P. M.
26th	29·891	85·6	74·8	80·0	76·7	86	N. N. E.	76	0·96	Cloudy, with fine intervals. Heavy rain at 1¾ A. M., and before sunrise.
27th	29·880	87·4	75·4	81·3	76·4	80	N.E.by E.	102	....	Fine, with passing clouds.
28th	29·900	85·6	73·9	80·2	72·7	70	N.E.by E.	117	....	Passing clouds.
29th	29·884	86·9	74·9	81·3	74·7	74	N. E.	153	0·16	Chiefly cloudy. Rain at 11¼ P.M.
30th	29·862	83·6	73·1	79·4	75·6	84	N.	201	2·56	Overcast. Heavy rain before 5½ A.M., and at 11½ P.M.
31st	29·869	84·7	73·9	77·6	74·7	87	N. N. E.	59	0·46	Passing clouds. Rain at 8¼ A.M.

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N. R. POGSON, Government Astronomer.

Meteorological Results *from the Madras Observatory Register, for the month of November,* 1865.

1865.	Barometer reduced to 32°.	Standard Thermometers. Observed extremes. Maxim.	Standard Thermometers. Observed extremes. Minim.	Standard Thermometers. Daily means. Dry.	Standard Thermometers. Daily means. Wet.	Percentage of humidity.	Wind. Prevailing direction.	Wind. Daily velocity.	Depth of rain.	General Remarks.
	Inches.	°	°	°	°	per cent.		Mls.	Ins.	
1st	29·852	87·5	75·2	81·9	76·6	79	E. by N.	90	......	Chiefly cloudy.
2nd	29·833	88·8	74·9	78·6	75·5	87	S.	106	1·46	Do. A heavy thunder storm, with rain, from 6 till 8½ P.M.
3rd	29·879	85·5	74·1	79·9	76·6	86	W. by N.	88	0·11	Cloudy. Shower at 6¾ A. M Heavy rain at 11¾ P.M.
4th	29·907	86·8	73·7	78·2	75·5	88	N. by E.	95	0·80	Day cloudy; night fine. Rain until 4¾ A.M., and at 3 P.M.
5th	29·908	84·8	74·6	80·5	75·4	80	N. N. E.	140	......	Cloudy, with fine intervals.
6th	29·913	85·1	74·9	78·8	75·1	84	N. by E.	165	0·33	Overcast. Rain between 4½ and 6 A.M.
7th	29·920	83·5	75·3	78·9	76·6	90	N. by W.	161	0·31	Cloudy. Frequent showers from ½ to 10½ A.M., and from 7¾ to 10½ P.M.
8th	29·893	84·4	74·9	78·3	71·0	71	N.	163	......	Light clouds.
9th	29·896	84·0	69·3	75·6	67·8	68	N. by W.	121	......	Light haze.
10th	29·883	83·6	66·5	74·5	66·1	65	N. N. W.	113	......	Fine.
11th	29·905	85·2	66·4	74·9	68·3	72	N. by W.	97	......	Do.
12th	29·890	86·2	67·6	75·9	69·1	72	N. by E.	113	......	Light clouds.
13th	29·898	85·2	68·2	75·1	68·5	72	N. by E.	133	......	Light clouds: fine night.
14th	29·943	84·9	67·5	75·1	66·6	64	N. N. E.	102	......	Chiefly fine.
15th	29·966	85·0	66·6	76·8	69·1	68	N. N. E.	124	......	Fine.
16th	29·978	85·0	69·9	78·5	73·5	79	N. E.	101	......	Do.
17th	29·934	85·8	72·6	79·9	75·9	84	N.E.byE.	150	......	Passing clouds.
18th	30·009	85·2	75·7	80·5	75·0	78	N. E.	187	0·03	Cloudy. Shower at 10¼ P.M.
19th	30·046	80·0	74·0	76·4	74·4	91	N.E.by N	141	0·67	Overcast. Frequent showers: heaviest at 4¼ A.M.
20th	29·988	83·0	73·1	77·6	74·4	86	N. by E.	178	0·88	Chiefly overcast. Showery. Heavy rain at 1½ A.M.; 7 and 8¾ P.M.
21st	29·926	83·6	73·2	78·3	74·9	85	N.Eby.N	191	0·75	Cloudy. Heavy rain from 1 to 2 A.M. Showers at 7½ and 9½ A.M., and at 6¼ and 9½ P.M.
22nd	29·929	83·1	75·1	79·3	74·0	78	N. E.	192	......	Passing clouds.
23rd	29·953	83·8	73·5	79·7	74·1	77	N. by E.	284	......	Chiefly overcast.
24th	29·880	82·1	73·5	78·6	73·5	79	N.	376	0.11	Overcast. A strong breeze set in from the North at 8¼ A. M. Rain at 11½ P.M.
25th	29·761	77·0	72·0	73·7	72·5	94	N.	464	4·73	A northerly gale blowing all through the day. Rain from midnight to 4 A.M., and from 9 A.M. to 8½ P.M.
26th	29·646	79·7	69·1	75·0	73·3	92	N. N. E.	700	4.36	A cyclone passing southward of Madras, causing a heavy gale throughout the day. Greatest wind 43 miles per hour, at 9¼ P.M. Rain all day: heaviest from 4¾ to 6½ A.M., and from noon till 7 P.M.
27th	29·883	78·1	71·9	73·5	72·3	94	S. by E.	268	3·16	High wind and heavy rain steadily decreasing up to 9 A.M. Light wind and fine sky with passing clouds in the later part of the day.
28th	29·950	82·0	70·7	76·0	74·7	95	S. S. E.	68	......	Fine, with passing clouds.
29th	29·976	82·3	73·0	77·3	75·0	90	N. E. by E	86	......	Passing clouds.
30th	29·951	82·8	74·7	77·6	74·8	88	N.E.by E	104	0·06	Do. with rain between 6 and 7¼ A.M.

N. R. POGSON, *Government Astronomer.*

Meteorological Results *from the Madras Observatory Register, for the month of December,* 1865.

1865.	Barometer reduced to 32°.	Standard Thermometers. Observed extremes. Maxim.	Standard Thermometers. Observed extremes. Minim.	Standard Thermometers. Daily means. Dry.	Standard Thermometers. Daily means. Wet.	Percentage of humidity.	Wind. Prevailing direction.	Wind. Daily velocity.	Depth of rain.	General Remarks.
	Inches.	°	°	°	°	per cent.		Mls.	Ins.	
1st	29·936	81·9	74·7	77·7	74·1	85	N.E.byN.	128	0·11	Passing clouds with rain between 6 and 7½ A. M.
2nd	29·945	81·6	72·3	76·5	71·3	78	N.E.byN.	155	....	Chiefly cloudy.
3rd	29·939	81·5	71·7	76·4	72·8	85	N.	200	....	Nearly overcast.
4th	29·832	76·9	73·4	75·4	73·8	93	N.E.byN.	399	3·14	Overcast & stormy. *See note.*
5th	29·951	81·7	73·5	77·2	75·1	91	E.	137	1·33	Unsettled and rainy until noon. Passing clouds for the rest of the day.
6th	30·000	82·6	74·1	75·7	74·4	94	N. E. by E.	142	0·92	Passing clouds. Light showers before sunrise. Rain at 6½ P. M.
7th	30·003	81·1	73·7	77·9	72·0	75	N.E. by N.	178	0·07	Shower at 4 A. M. Passing clouds.
8th	29 988	81·8	71·1	76·0	72·5	85	N.E.byN.	126	....	Passing clouds.
9th	29·998	82·5	73·1	76·9	73·2	84	N. E. by E.	111	....	Fine, with passing clouds.
10th	30·027	81·3	71·5	76·8	72·0	80	E. N. E.	77	....	Do. do.
11th	30·013	82·1	72·0	77·1	72·3	80	N. E.	143	....	Chiefly fine.
12th	30·013	81·9	71·7	77·4	72·0	81	N.E. by N.	186	....	Fine, with passing clouds.
13th	30·001	81·7	70·6	76·2	69·7	73	N.E.byE.	151	....	Do. do.
14th	30·029	80·9	70·7	76·3	68·1	66	N.E.byE.	204	....	Chiefly fine.
15th	30·053	80·1	73·0	76·5	67·8	65	N. E.	210	....	Fine.
16th	30·022	81·2	69·8	76·4	68·6	68	N. E.	216	....	Do.
17th	29·996	80·8	71·2	77·2	67·9	63	N. E.	197	....	Do.
18th	29·990	81·6	72·0	77·0	69·1	67	N.E.byN.	231	....	Passing clouds.
19th	30·000	80·7	74·0	77·0	67·6	62	N.E.byN.	262	....	Do.
20th	30·025	81·3	71·0	77·4	69·2	66	N.E. by N.	259	....	Do.
21st	30·070	81·4	75·4	78·0	70·0	68	N.E.byN.	291	....	Do.
22nd	30·078	81·1	75·9	78·0	68·7	63	N. N. E.	295	....	Do.
23rd	30·052	81·6	69·3	77·0	69·4	69	N.E.byN.	232	....	Do.
24th	30·027	81·0	75·3	77·5	69·5	68	N. E.	272	....	Do.
25th	30·025	81·5	70·1	76·6	69·0	69	N. N. E.	203	....	Passing clouds.
26th	29·986	80·6	71·1	76·4	69·4	71	N. N. E.	177	....	Chiefly overcast.
27th	29·953	81·2	69·8	74·3	69·6	79	N. N. E.	138	....	Fine, with passing clouds.
28th	29·943	80·6	68·4	73·4	68·6	79	N. N. E.	136	....	Do. do.
29th	29·974	79·7	68·0	73·8	69·0	79	N. N. E.	153	....	Do. do.
30th	30·003	80·5	69·0	75·8	70·2	77	N. N. E.	183	....	Do. do.
31st	29·997	81·3	74·2	77·3	69·8	69	N. N. E.	258	....	Chiefly fine, passing clouds.

A moderate gale blew on the 4th instant, commencing abou day-break, caused most probably by another cyclone passing far to the South of Madras. The Barometer completely reduced and corrected for known hourly variation, unchanged at 29·82 inches throughout the day, *precluding all fear of* a storm at this place. The greatest velocity of the remained *wind was 27 miles* per hour, from 4 to 5 P.M.; and it averaged 17 miles for above 24 successive hours.

Rain fell heaviest about 4 P.M. on the 4th, and 3½ A.M. on the 5th; in all, nearly inches distributed over 23 hours.

PART IV.

MEDICAL INTELLIGENCE.

A. Chalybeate Spring at Bangalore.

Dr. Mackenzie, C. B., when Officiating Principal Inspector General of Hospitals, kindly brought the following papers to the notice of the Editor of this Journal. The documents are extracted from the Proceedings of the Medical Board, but nothing further has been found on the subject. Dr. Mackenzie, upon his return to Bangalore, instituted a search for the well alluded to, and thought it must be one of three or four from which he obtained some water for analysis by the Chemical Examiner. The water is now under examination, and we trust we shall be able to give the results in our next number.

Fort St. George, 24th March 1817.

PUBLIC DEPARTMENT.

To the President and Members of the Medical Board.

GENTLEMEN,—I am directed by the Governor in Council to transmit to you the accompanying copy of a letter from Captain W. Garrard at Bangalore, and to desire that you will cause such a chemical analysis to be made of the mineral water therein alluded to, either upon the spot or otherwise as the case may require, for ascertaining with precision the medicinal qualities of the spring, as may enable you to give a professional opinion respecting its probable effects for the cure of invalids.

2nd. You will also endeavour to obtain an authentic account of cases in which the use of the water is stated to have had a beneficial effect.

I have the honor to be,
Gentlemen,
Your most obedient servant,

(Signed) D. HILL,
Secretary to Govt.

To the Chief Secretary to Government, Fort St. George.

SIR,—I have the honor to report, for the information of the Right Honorable the Governor in Council, the existence of a mineral spring at Bangalore, which, from the knowledge already obtained of its medicinal virtues, bids fair to become an object of the utmost importance to the community of British India.

The original discovery was made by me some months ago, and I have delayed submitting the subject to Government until fully satisfied by experience of its meriting their attention. The water is a chalybeate, being strongly impregnated with Carbonate Iron, and the addition of a little common salt renders it an active aperient.

Should Government be induced to direct a regular chemical analysis to be made of the above on the spot, I feel assured, from the information already in my possession, that the result will prove the value of the discovery, and as the above is my private property, I have only to add that such troops of His Majesty or the Honorable Company whose cases may require the mineral may at all times have free access to it under the control of their Medical officers, in consideration of which, and in the event of the analysis and report of the Medical Board proving favourable, I humbly trust that Government will be pleased to grant to me an adequate monthly or annual allowance, subject, if they desire it necessary, to the final decision of the Honorable Court of Directors, and to continue only so long as their troops have access to the mineral in the manner above proposed.

I have the honor to be,

Sir,

Your very obedient Servant,

(Signed) W. GARRARD,

BANGALORE, 13th March 1817. *Captain of Engineers.*

(A true copy.)

(Signed) D. HILL,

Secretary to Government.

Fort St. George, 13th October 1817.

To the Right Hon'ble W. ELLIOT, *Governor in Council.*

&c. &c. &c.

Fort St. George.

HONORABLE SIR,—Para 1. With reference to a letter which we had the honor to receive from the Secretary to Government in the Public Department, dated 24th March, together with its enclosure from Captain Garrard, on a subject of a mineral spring in the garden

of that gentleman at Bangalore, we beg leave to state to your Honor in Council, that we directed the Superintending Surgeon of the Mysore Division to request that Mr. Surgeon Heyne (who was then at Bangalore) would analyse and report upon the chemical qualities of that water. We at the same time desired that the Medical Officers of the Mysore Division should be directed to report the result of their observations regarding the medicinal virtues of the chalybeate spring in the various diseases and sequelæ of fevers to which the troops are so liable in many parts of the Mysore country.

2. We have now the honor herewith to submit a report (No. 1) from Mr. Heyne, on the constituent part of the springs in Captain Garrard's garden. From this it would appear that ten pounds of the fluid contain—

Oxyde of Iron	7·5
Carbonate of Lime	0·5
Alumina	1·0
Sulphate of Lime	2·0
Muriate of Lime	5·7
Do. of Soda	5·3
Grains	22·0

3. The mode adopted by Mr. Heyne to determine the proportion and nature of the solid contents of this Spa, leave little doubt as to the correctness of the analysis which he has made in this respect. With regard, however, to the elastic fluids which it contains, his conclusions appear to us less satisfactory, and we are disposed to concur in opinion with Dr. Greig from the brilliancy of the water when conveyed to this place in well corked bottles, and from the very rapid deposition of an oxyde of iron upon being exposed for a short time to the air, that the proportion of carbonic acid is greater than Mr. Heyne has considered it to be.

4. We conceive a minute enquiry into the quantity of carbonic acid to be of great importance, and we accordingly directed the attention of the Superintending Surgeon of Mysore most especially to this subject. Independently of the great value of carbonic acid as a tonic and stomachic, it is a vehicle in which the various modifications of iron are introduced into the system with the greatest advantage.

On this consideration we look with anxiety for the essay promised by Doctor Heyne, in which a minute enquiry into these points will not, we trust, be overlooked.

5. The analysis afforded by Dr. Heyne, of the Bangalore Spa, proves it to be one of the most powerful Chalybeate springs with which we are acquainted. As the saline ingredients are too minute to add to its medicinal powers, we are disposed to place it with Dr. Greig amongst that class of mineral waters which Dr. Saunders, in

his valuable treatise on this subject, has termed the simple Carbonated Chalybeates—and as waters impregnated with this active metal have been in high estimation in Europe, as powerful tonics, we shall take the liberty of laying before your Honor in Council a table shewing the proportions of iron in the Mysore Spa compared with the well known springs possessing similar virtues in Europe.

6. With regard to the medicinal effects of the chalybeate at Bangalore, we have great satisfaction in submitting to your Honor in Council the distinct and able report of Dr. Greig, of His Majesty's 22nd Dragoons, on this subject.

7. From this interesting document, it will appear that the powerful tonic effects of the chalybeate were beneficially evinced upon cases of debility and indigestion, the consequence of severe attacks of fever; in weakness and great relaxation of the bowels brought on by long continued dysentery, and that it also proved serviceable by restoring tone to the system in obstinate and long continued ulcers. In short, that it manifests in the diseases of this country all the tonic powers, giving strength, nervous energy, and greater vigour to the functions, which waters of the same class do in Europe.

8. Dr. Greig has dwelt so fully upon the general medicinal effects of chalybeate waters, that it may be deemed almost superfluous to offer any further observations on this subject. We shall, however, take the liberty of briefly submitting to your Honor in Council a few remarks upon those diseases in which the Bangalore Spa promises to be generally useful, more particularly as affecting the Military branch of the service.

9. The operation of chalybeates upon the system is to increase its tone, to excite the stomach to a more healthy action, and to impart vigor to all its secretions and functions.

10. The chalybeate principal being more abundant in the Bangalore spring than in most of the chalybeate water generally resorted to in Europe, we have reason to conclude, and we have no doubt that a further experience of its effects will confirm our conclusions that this will prove to be one of the most powerful and useful tonics of this valuable class of medicines.

11. Experience has already decided that it is eminently serviceable in those cases of general debility, and that peculiar mobility of the system which renders a large proportion of the soldiery so liable to relapses of fever and so long unfit for general service after attacks of the Mysore fever. In this point of view, we consider the discovery of this chalybeate and its medicinal effects as one of great importance, and one which promises to be the means of speedily restoring health to soldiers, whom it has heretofore often been deemed necessary to remove entirely from the Mysore country, in order effectually to remove the debility and tendency to relapse.

12. We are disposed to anticipate great advantages in the judicious exhibition of this chalybeate in various cachectic diseases terminating in dropsy, a form of disease that has proved destructive to the native soldiery, who have suffered from long and repeated returns of the endemic fever of Mysore.

13. The chalybeate will prove beneficial in relieving and ultimately removing that relaxation of the stomach and impaired digestion, so frequently the consequence of a long residence in a hot and relaxing climate. In this respect the temperature of the Mysore climate and the open clear country around Bangalore must greatly aid the favorable effect, and is likely, in many cases, to obviate the necessity of a sea voyage. In short, we are authorized by analogy to conclude that, under a judicious and skilful mode of administering these waters, they will prove serviceable in a very large proportion of diseases of debility, unattended by visceral obstructions or unaccompanied by symptoms of fever or increased heat.

14. In a letter addressed to the Superintending Surgeon of the Mysore Division, extract of which we beg leave herewith to submit, we requested that a *comparative* trial might be made of the Bangalore Spa with other tonics. The frequent removal of troops has probably prevented the Superintending Surgeon from instituting this desirable experiment. We feel confident, however, that the chalybeate water will be found to act generally as a more powerful stimulus in restoring healthy action than any which is now in use.

15. So soon as we shall be furnished with the comparative statement from the Superintending Surgeon of Mysore and the promised essay from Dr. Heyne, we shall submit to your Honor in Council a general history of the Bangalore Spa, its medicinal effects and the most approved manner of exhibiting it in the various diseases in which it has proved useful.

16. We cannot conclude this report without respectfully soliciting the attention of your Honor in Council to the highly important discovery which Captain Garrard has made, in bringing to the notice of the public a mineral water of great service, and which has heretofore been a desideratum in this country. We hope we may also be permitted to notice the liberality with which he has enabled the numerous invalids in the army to benefit by his valuable discovery.

17. We have no hesitation in offering it as our opinion that the Bangalore Spa will prove of great service to numerous cases of debility, consequent to the severe fevers and fluxes which are endemial in many parts of Mysore. We conceive, too, that the discovery of this Spa may be the means of preserving to Government the services of many Officers, Civil or Military, by obviating in cases of debility

the necessity of a sea voyage which might, prior to the discovery of the mineral water in Captain Garrard's garden, have been deemed unavoidable.

(Signed) A. WATSON, M.D., P. M. Bd.
(„) W. HARRIS, M.D., 2nd M. M. Bd.
(„) A. BOSWELL, 3rd M. M. Bd.

Fort St. George,
Medical Board Office, 13th October 1817.

To the Superintending Surgeon of the Mysore Division.

Sir,—I have the honor to acknowledge your letter of the 26th May, giving cover to one from the Secretary of the Medical Board to you under date the 19th, in which the Board have done me the honor to select me for the analyzation of the mineral water at this station, situated in Captain Garrard's garden.

I beg leave to state that I have been very assiduously employed for these two months in this duty, on the water from a well in a garden belonging to Captain Garrard, the well first discovered having lost the chalybeate property which it originally possessed, solely, I understand, owing to the injudicious proceedings of the workmen employed in steyning it.

After the minutest investigation frequently varied and repeated, I find that this mineral water in 10 lbs. contained—

Oxyd of Iron	7·5
Carbonate of Lime	0·5
Alumina	1·0
Sulphate of Lime	2·0
Muriate of Soda	5·7
Do. of Lime	5·3
Grains	22·0

And gaseous substances, by estimation 45 cubic inches of Carbonic Acid Gas.

In one pint there is, of course—

Oxyd of Iron	0·75
Carbonate of Lime	0·05
Alumina	0·10
Sulphate of Lime	0·20
Muriate of Soda	0·57
Do. of Lime	0·53
Grains	2·2

and 4·5 cubic inches of carbonic acid gas.

I shall now state briefly how I proceeded to obtain the solid contents and their proportions. By evaporation I had found them to amount (in 10lb.) in the aggregate to 23 grains, and by the generally known reagents ascertained that they consisted of the substances mentioned in the above statement.

To separate the carbonates of earth and iron, 10lb. of water were kept in a state of ebullition for about a quarter of an hour, after which the deposit filtered and dried, was found to weigh on an average 8 grains in different experiments.

To produce these substances separately the whole sediment was dissolved in muriatic acid when the alumina was left undissolved, and weighed about 1 grain.

The iron was precipitated by ammonia and after it the lime, by sulphuric acid, from the muriatic solution; the latter yielding a quantity of sulphate of lime which shewed grains 0.5 of carbonate of lime.

The iron was re-dissolved in muriatic acid and precipitated, by carbonated kali, and after being dried in a heat of 200 Faht., it weighed on an average grain 7.5.

The rest of the solid contents in the quantity of water remaining (which is nearly as pure as rain water) were obtained by evaporating it to a few ounces, when the sulphate of lime showed itself by falling to the bottom and increased by farther slow evaporation and by an addition of some alcohol, weighed as stated in amount generally about 2 grains. There remained only now the muriates of lime and soda, for which the whole was reduced to dryness and weighed about 11 grains. It was a saline substance which required much dispatch in the operations (of weighing) as it powerfully and rapidly attracted the moisture of the air. The muriate of lime was separated by alcohol, and the remaining salt, consisting of cubic crystals of muriate of soda, weighed 5.7. So that the muriate of lime must have amounted to grains 5.3. The base of lime was ascertained by sulphuric acid dropt into a watery solution of it, which gave sulphate of lime—the muriatic acid had been found by nitrate of silver.

The absence of all perceptible signs of carbonic gas showed that none exists in it free or *uncombined*, so whatever quantity there may be of it, must be *combined with a base.* Now Thomson in his chemistry expressly says, that carbonic acid *uncombined* only or *combined with a base in excess*, may be detected by the following tests :

1. By lime water, which occasions a precipitate which is soluble with effervescence, in muriatic acid.

2. By litmus, which is fugaciously reddened, &c., and as both tests have been tried and demonstrated its presence, it must, of course, exist in this water *combined* with a base in excess.

Kirwan again maintains that when carbonic acid is ***combined in excess*** with a base, it must amount to $\frac{1}{8}$ of the bulk of water to produce that effect, viz., that of reddening litmus, &c, but $\frac{1}{6}$ of 27 the cubic inches in a pint of water is exactly 4.5 which are consequently the number contained in a pint of the chalybeate.

These are the general results of my analysis, which I beg you will have the goodness to state to the Medical Board, to whom, after my arrival at Madras, I shall do myself the honor of presenting my essay on this subject.

The daily rains, at present, which may be expected to continue for many months, prevent any further experiments upon the chalybeate, and indeed I scarcely know what more remains to be done unless it should be to prove the quantity of carbonic gas by direct experiments with the pneumatic apparatus, but which I conceive scarcely necessary. The great quantity of iron (8 times as much as in the Tunbridge waters) must render it a powerful tonic, and such I have found it in my own case, for about a month ago I considered myself so low in health that I scarcely hoped to be able to remain much longer in India, where, after the steady use of this mineral water, I am happy to say I feel now equal to any laborious exertions.

(Signed) BENJN. HEYNE, M. D.,
Surgeon and Naturalist of the Honorable Company.

BANGALORE, 2nd June 1817.

FORT ST. GEORGE, 13TH OCTOBER, 1817.

To the Superintending Surgeon of the Mysore Division, Bangalore.

SIR,—In compliance with the wishes of the Medical Board, as expressed in their Secretary's letter to you, dated the 19th ultimo, I have the honor to inform you that for several months past I have paid particular attention to the effects of the Bangalore Spa, of which, through the liberality of the Proprietor, Captain Garrard, I have been enabled to make a trial on an extensive scale in the Hospital under my charge; the result has been particularly favorable, and may encourage us to hope that what has hitherto, in this country, been a great desideratum, is at length likely to be supplied.

Mineral waters have long been employed in the cure of diseases, and the high repute in which they are at present held both by Medical practitioners and the public at large, is a strong proof that the beneficial effects supposed to result from their employment are well founded. When we consider their great importance in respect to medicinal properties, and recollect that their existence has been dis-

covered, and that their active power has been beneficially employed in almost every country on the surface of the Globe, it becomes a matter of surprize and regret, that throughout the vast extent of British India there is not, at this day, if my information be correct, any mineral spring resorted to or celebrated for its efficacy in the cure of disease. We cannot suppose that his circumstance arises from nature having withheld from this country gifts which she has distributed bountifully to others, for we know that water in general partakes more or less of the properties of the strata through which it passes, and also that the mineral substances from which medicated springs derive their virtues, are found as perfectly and plentifully here as elsewhere on the surface of the earth. We may reasonably conclude, therefore, that mineral waters will be found to exist as abundantly in India as in other countries, whenever the industry and ingenuity of scientific men shall be directed towards their discovery.

The Bangalore Spa may be classed with what Dr. Saunders, in his treatise on Mineral Waters, calls simple carbonated chalybeate, which differs from spring water only in holding a quantity of carbonate of iron in solution, and of which the Tunbridge Spa affords an example. The water has been carefully analyzed by Dr. Heyne, and as his report on the subject is already before the Board, it is unnecessary for me to enter into any long details respecting its chemical composition. I may remark, however, that the quantity of oxyde of iron found to exist in the water (being 3-4ths of a grain in each pint) exceeds that of any simple carbonated chalybeate with which we are acquainted, and, consequently, its tonic power may be expected to prove proportionably great.

Iron, in mineral waters, is most commonly found combined with carbonic acid, and this is generally considered, its most useful form being that which is most easily decomposed and most readily acted upon when taken into the stomach. The quantity of carbonic acid contained in the water has not been ascertained with accuracy, owing to the want of a pneumatic apparatus, but it is estimated by Dr. Heyne to amount to 1-6th of the bulk of the water or 4-5 cubic inches in a pint, because the water, when added to Infusion of Litmus, fugaciously reddens it. This estimate is founded on a calculation of Kirwan, in his Essay on the Analysis of Mineral Waters, but it appears to me to be defective, for, in one part of his treatise, Kirwan asserts that Infusion of Litmus is not reddened, unless the water contains 1-6th of its bulk of carbonic acid in a *semi-combined state*, whereas Dr. Heyne's calculation allows only 1-6th for the whole quantity of carbonic acid *both combined and semi-combined*; this part of the analysis, therefore, must be considered as still very defective, and I have no doubt that when enabled to complete the investigation with the assistance of a pneumatic apparatus, future experiments will discover the proportion of carbonic acid to be greater than what is above

stated. I have been thus particular on this point, as it is considered to be one of great importance, and I have taken the liberty of differing from Dr. Heyne on this point alone, as it is the only part of his analysis which is founded on mere calculation, and which has not been ascertained by actual and repeated experiments.

The analysis of the Bangalore Spa and the well known effects of similar springs in other parts of the world lead us to expect it to prove a powerful tonic, and such I have invariably found it in the numerous trials which I have lately made of it. Its effects when taken into the stomach are to quicken the pulse, to cause a glow of heat over the body and a transient determination to the head, occasionally amounting to vertigo. This last effect is most observed in those of a full habit, particularly on drinking the water for the first time. When the stomach is foul, the chalybeate sometimes produces nausea, and when an undue proportion of bile is contained in the bowels, it frequently purges briskly, but neither of these is the proper effect of the water, and, therefore, to prevent this occurrence, it seems advisable in general to exhibit a purgative before commencing the use of the Spa. Amongst its more immediate effects, we may also enumerate that of increasing the cuticular and urinary discharges. Its more gradual or remote effects are to increase the tone of the stomach and bowels ; to improve the appetite and strength ; to promote the deficient secretions ; and to invigorate the system at large ; frequently it renders the alvine evacuations of a dark colour—a circumstance in itself of little consequence, but which requires to be mentioned in order to prevent unnecessary alarm on the part of the patient. From the effects enumerated, the Bangalore chalybeate may be expected to prove a valuable remedy in most cases of debility and relaxation, requiring the use of tonics and unconnected with visceral obstructions ; but even in certain cases of the latter description, I conceive that it may prove useful if a small quantity of sulphas sodæ or sulphas magnesiæ or a mixture of both be added, so as to communicate a purgative quality to the water, similar to that of Cheltenham.

My experience of the effects of the Bangalore Spa has been, in a great measure, confined to cases of debility, arising from severe attacks of fever and dysentery, of which the return of a sickly detachment of the Regiment from field service in March last furnished me with a variety of examples. In cases of fever, after all acute symptoms had subsided and general debility and want of appetite were the only remains of the disease, the chalybeate given at first in the quantity of half a pint twice a day, and afterwards increased to a pint and a half in the course of the day, was attended with the very best effects, and in every instance effected speedy cure when I first made trial of it. In convalescent fever cases I gave at the same time a small allowance of wine, but finding the effects of the water alone sufficiently powerful, I have latterly trusted entirely to its tonic powers, and in no instance have I been disappointed.

By way of illustrating these observations, I shall now give a short detail of a few of the cases of fever treated in Hospital.

Case I.—Corporal Wilkinson, Æt. 29, was attacked with bilious fever on the 4th of March last, when on the route from Bellary to Bangalore, with a detachment of Her Majesty's 22nd Dragoons. The symptoms being urgent, general blood-letting was employed at the commencement of the disease; the bowels were freely opened, and the patient was put under a course of calomel combined with antimonial powder, which, as the functions of the liver were considerably deranged, was continued until the mercury affected the mouth. On his arrival at Bangalore, on the 23rd of March, the patient came under my care in a state of great debility, with a sallow countenance, white tongue and almost total want of appetite.

For the first three days after his admission into hospital, mild aperients were given, so as to act moderately on the bowels, after which he commenced the use of the chalybeate in the quantity of half a pint twice a day. He had, at the same time, a light and nourishing diet, and was allowed two glasses of Portwine after dinner. On the 29th of March the quantity of water was increased to half a pint three times a day, and under this plan of treatment, so rapid was the patient's recovery, that on the 4th of April his appetite and strength were completely restored, and he was discharged from hospital to resume his duties.

Case II.—John Bristow, Private Dragoon, Æt. 21, was admitted into hospital on the 7th April last complaining of head-ache and vertigo, thirst, occasional nausea, pains in the limbs, general langour, prostration of strength and appetite. Pulse 100, soft ; skin hot ; tongue dry and white ; bowels regular ; had been complaining five days.

The stomach was cleared by a dose of Ipecacuanha, after which a purgative was given, and it was repeated on the three following days. On the 11th the head-ache, vertigo and pains in the limbs had nearly left him, but he continued extremely weak and had little or no appetite. His pulse calm and moderate ; tongue moist but white. He was ordered to take a pint of the chalybeate, with a scruple of epsom salt dissolved in it three times a day.

12th.—The water operated by stool three times yesterday ; appetite improves.

Rep. Aq. Chalybeate cum Magnesiæ sulph. every 4 hours.

The water has been continued, and causes two or three alvine evacuations daily, which are of a dark colour. Tongue moist and nearly clean ; appetite and strength daily improving.

Cont. Aq. Chalybeate ut supra.

16th.—Appetite, strength, and looks restored ; bowels open, and stools of dark colour.

Continue.

18*th*.—Feels perfectly well in every respect, and is discharged to-day.

Case III.—William Owens, Private Dragoon, Æt. 24. April 15th. Was admitted into Hospital on his return to quarters this morning in a state of convalescence from continued fever with which he was attacked when in camp near Chittledroog—about a fortnight ago. Has been treated with Purgatives, Calomel and Antimonial medicine; he now complains chiefly of debility and want of appetite; has head-ache and vertigo at times. Pulse 90, soft, skin moderate; tongue white; bowels open.

℥ Aq. Chalybeate Oss. Sulph Magnesiæ ℈ii. bis in die sumend.

16*th*.—The water operated by stool twice; he feels rather better.

Rep. Aq. Chalybeate ut heri.

18*th*.—Improving; bowels open.

Cont. Aq. Chalyb.

19*th*.—Appetite and strength improving; bowels open.

Cont. Aq. Chalyb. cum. Sulph. Magnesiæ *ter in die.*

22*nd*.—The water agrees well with him; his bowels are open; his looks improved; his appetite tolerably good, and he gains strength daily.

Cont. Aq. ut supra.

26*th*.—Improving daily.

Cont. Aq. Chalyb. ut supra.

30*th*.—The water has been continued, and his recovery has been progressive and satisfactory; he now feels perfectly well in every respect, and is discharged to duty.

Case IV.—James Jones, Private Dragoon, Æt. 24. On returning from camp, near Chittledroog, had a severe attack of bilious remittent fever, for which he was admitted into hospital on the 15th of April last. There being great determination to the head—blood-letting was employed, both generally and by means of leeches applied to the temples. Purgatives were also very freely administered. In the course of a few days, the fever having assumed a regular intermittent form, bark was given and had the effect of putting a stop to the paroxsyms; this medicine, however, was extremely nauseous to the patient, and considerably deranged his stomach and bowels, without tending, in any degree, to restore his strength and appetite. It was, therefore, laid aside, and he commenced the use of the Chalybeate on the 26th of April, in the quantity of half a pint twice a day. On the 29th, the quantity was increased to half a pint three times a day, and with the same good effects as in the cases above detailed; he regained his strength and appetite rapidly, and on the 5th of May, without the use of any other tonic, he was so completely recovered as to be enabled to return to his duty.

I have employed the chalybeate successfully in a number of other cases of convalescence from fever, but as they were similar to the above, in most respects, it seems unnecessary to detail them.

In severe attacks of dysentery, when mercury has been pushed so as to affect the mouth and the straining, passing of blood, and other dangerous symptoms have subsided, there frequently remains a great degree of general debility, a want of appetite, and a loose and irregular state of the bowels arising from laxity and want of tone in the stomach and intestines. In this state I have employed the Chalybeate in a great number of instances and with the best effects. I gave it, as in the cases of fever above detailed, sometimes combined with a little of the sulphate of soda or magnesia, when the state of bowels seemed to require it—the latter combination is particularly required when there appears to be any tendency to obstruction in the liver.

In cases of this and the preceding disease, the restoration of health was speedy, and the period during which it was necessary to give the Chalybeate was short, scarcely, in any instance, exceeding a fortnight in chronic cases of disease ; however, a much longer course is necessary, in order to give the water a fair trial.

In two cases of old and inveterate ulcers which were lately under my care, and in which, from long confinement in hospital, the health of the patient had suffered materially, I tried the effect of a course of the Chalybeate in the usual quantity, that is, beginning with half a pint twice a day, and afterwards increasing it to a pint and a half in the course of the day, which, I think, is as much as can, in general, be given, without affecting the head. In one of the cases, it produced a gradual amendment of health, and after a course of about two months' continuance, the patient was dismissed to his duty perfectly cured. Various tonics, particularly bark, has previously been used in this case without benefit. In the other patient, who was of a bilious habit, the water for the first fortnight purged excessively, causing four or five watery evacuations daily, afterwards it ceased to have this effect, but produced so much determination to the head, denoted by almost constant vertigo, that I was obliged to give up the use of the Chalybeate, and have recourse to wine and bark, which, with the assistance of an occasional purgative, gradually effected a cure. In the first of these cases, the Chalybeate appeared to agree with the patient better than the bark ; in the other the reverse was the case.

In two cases of scrofulous enlargement and induration of the glands of the neck, I have given the Chalybeate a fair trial for upwards of months past, but it does not appear to me to have been of any service. I have tried it also in a few instances of general debility, impaired appetite, and irregular biliary secretion, the effect rather of long residence in India than of any permanent organic disease, and in such cases have generally found it highly beneficial, particularly when from one to two drachms of vitriolated soda or magnesia is added to the morning dose, so as to cause it to operate mildly on the bowels.

The above is a faithful detail of my experience of the effects of the Bangalore Spa. So far as it goes, it is highly favorable and induces me to believe, that under proper management, the Chalybeate water of this place is capable of producing all or most of the beneficial effects so well known to result from the use of those of Tunbridge, Scarborough, and Cheltenham ; if a simple tonic is required, the water may be taken in its pure state, if a purgative and tonic, such as the Cheltenham water, is required, the addition of from one to two drachms of aperient salt to the morning dose will communicate the property ; the water, when taken in its pure state for any length of time, is apt to induce constipation, on which account an occasional purgative will be necessary ; the periods at which I have usually given the Chalybeate have been early in the morning and again in the course of the forenoon, and from half to three quarters of a pint has been the quantity usually given at each time.

It is necessary that the water be drank on the spot, because, like all other carbonated Chalybeate, it becomes decomposed on exposure to the air ; even in well corked bottles this effect takes place to a certain extent, and in the open air so rapidly does it occur, that in the course of eighteen hours the water is found to have lost all its Chalybeate properties, the fixed air having escaped and the oxyd of iron being deposited in the form of a brownish yellow powder ; this being the case, the site of the spring must be considered as particularly fortunate, for were we to search the whole of the peninsula of India, I believe no spot could be found, which, in respect to the general purity of its atmosphere, the coolness and salubrity of its climate, its congenialty to the European constitution, the nature of its vegetable productions, its society and amusements, combines so many advantages for the valetudinarian as the delightful station of Bangalore.

In concluding this report, I beg leave to observe that I do not, by any means, consider it as including all the diseases in which the Bangalore Spa is likely to be found beneficial. I have mentioned such only as have come within the range of my own experience, but it was my intention, as opportunities might offer, to have given it a trial in various other complaints, in which the Chalybeate springs of England are found useful, such as certain cases of Dyspepsia, chlorosis, some of the discharges peculiar to females such as Fluor albus and Menorrhagia, sterility proceeding therefrom, a relaxed and debilitated state of the uterine system, debility consequent upon long residence in India, irregular biliary secretion arising from the same cause, &c.

Being on the point of quitting this station to proceed with my Regiment on field service, I am unable, at present, to prosecute further inquiries on the subject, but I hope to be enabled to do so, and to report the result to the Medical Board at some future period.

(Signed) ROBERT GREIG, M.D.,
Acting Surgeon, 22nd Dragoons.

BANGALORE, 14th June 1817.

Extract of a letter from the Medical Board, to the Superintending Surgeon of the Mysore Division, dated 19th May 1817:—

In your letter of the 20th of May 1816, many of the Sepoys of the 12th Regiment, and a number of men of the 8th Regiment are reported to have rapidly recovered during the use of the water. It will readily occur to you, however, that convalescents removed from the unhealthy station of Seringapatam would, under any circumstances, re-gain health rapidly at Bangalore; to arrive, therefore, at any specific and useful conclusion on the subject under consideration the mode already suggested (of comparative trial) should, as far as practicable, be generally adhered to.

The Board, in conclusion, direct that with the view of eliciting every source of practical information regarding the qualities of a valuable mineral water so favorably situated, you will call upon all those Medical Officers in your superintendency, and who have resided for some time at Bangalore, to furnish you with a general report of the medicinal effects which they have observed to arise from the use of the Chalybeate water in Captain Garrard's garden, and that they will, at the same time, be pleased to state to you such detailed cases as may, in their judgment, tend to elucidate its value in particular cases of indisposition.

(True extract.)

(Signed) A. STEWART,
Secretary, Medical Board.

PUBLIC DEPARTMENT.

To the Medical Board.

GENTLEMEN,—I am directed by the Right Hon'ble the Governor in Council, to acknowledge the receipt of your letter of the 15th instant, with its enclosures, and to desire that you will take into consideration the measures which it may, in your judgment be most advisable to adopt with the view of deriving the advantage which the Mineral Springs at Bangalore may be calculated to produce,

(Signed) D. HILL,
Secretary to Government.

FORT ST. GEORGE,
29th October 1817.

Madras Apothecaries' Society.

Extracts from the Report of the Madras Apothecaries' Society, for the year ending July 31st, 1865.

Patron.

SURGEON S. MASON.

THERE are, at present, 53 Subscribers on the list.

There have been 22 Meetings held during the year, at which the maximum attendance of Members was 20, minimum average 12.

Work performed by the Society during the year, arranged according to the "*Plan of working.*"

I.—*Reading of original essays on various subjects in Medicine and the Collateral Sciences.*

1. Etiology of Cholera, (electric theory) by R. Wilkins.

2. On Epithelioma, by W. D. Stewart.

3. On Blood Coagulation, by R. Wilkins. He supposes that the electricity contained in the blood serves to keep it in the fluid state, and that its escape or alteration in quantity results in coagulation. Most, (if not all), of the facts and recorded experiments connected with the process seem to him to be more in harmony with this view than with any other.

4. Remarks on the medicinal products of the Cocos Micifera, by J. J. Wood.

5. On Pneumonia, by Caleb St. John Lawrence.

6. On Albuminuria. The several conditions under which albumen appears in the urine temporarily and persistently, by W. D. Hamilton.

7. On Medicine Chests; their construction, contents, &c. by J. J. Wood.

8. On the Causation of Uterine Action at the close of gestation, by R. Wilkins. Uterine action at this particular period comes on, as a consequence, he thinks, of the pressure exerted upon the uterine arteries during the latter months of pregnancy, and to the deterioration which the blood, circulating in them, undergoes from the great demand made upon that fluid for materials necessary for the development and growth of the fœtus.

He regards the act as differing in no material respect from ordinary spasmodic action.

9. On Dosg, Dog-bite, and Hydrophobia, by J. J. Wood. This paper was published in the last number of the *Madras Quarterly Journal.*

10. On the Causes of the Difference of Complexion in children of the same family, by Caleb St. John Lawrence.

11. A paper submitted by Mr. Harvey during the discussion on Cholera, being a letter from Mr. G. Norton to him on a modification of the well-known saline plan of treatment of that disease. Mr. Norton proposes to use salts similar to those contained in the serum of the blood, and in the same proportion. These are to be mixed with a certain quantity of albumen of egg and dissolved in water.

II.—*Reading of papers from Periodicals and recently published works on subjects new to the profession.*

1. An abstract of all that was lately published by Professor Simpson and others on Acupressure, by R. Harvey.

2. An abstract of the arguments of Professor Simpson in favour of Acupressure, by R. Harvey.

3. Chemistry and Pathology of the Urine according to the latest researches. Mr. Harvey has read portions of his summary on this subject at five different Meetings, and has not yet concluded.

III.—*Reading of detailed statements of instructive and interesting cases.*

There were only two cases read before the Society during he past year:

1. Case of Hepatic Abscess opening into the Pericardium, the sixth case on record: (subject, an European), by Mr. R. Harvey.

This case was published in the last number of the *Madras Quarterly Journal.*

2. Case of strongly marked Hemiplegia occurring in a Rajpoot Sepoy, Æt. 28, under the care of the late Physician General A. N. Magrath.

Treatment.—Active purgatives, followed by large doses of calomel combined with opium to ptyalism; blisters to occiput and nape of neck, with stimulating liniments to affected side. Recovery, perfect; discharged for duty 2 months and 2 days after admission, by J. J. Wood.

IV.—*Discussions or conversations on professional subjects as agreed upon from time to time by the Members.*

1. On Cholera; its etiology, prophylactic and therapeutic management. This subject occupied five evenings.

2. Delirium Tremens. The discussion of this subject was opened by remarks by Mr. R. Harvey, on its treatment as practised by Professor Blacklock.

3. On Atheroma.

4. On Griffith's Mixture, Podophyllin, Cannabis, Digitalis, Compound chalk Mixture, and Paterson's Pills.

V.—*Lectures or discourses, single or successive, in special departments of study.*

1. On the more important drugs of India, in 3 lectures, by J. J. Wood.

2. Remarks on Atheroma, by R. Wilkins. He regards Atheroma as the result of an effort on the part of nature to repair an injury done to an artery.

3. On the remedies used by the natives of Southern India in the treatment of ophthalmic diseases, by J. J. Wood.

4. Remarks on Galvano-puncture in aneurism, by R. Wilkins.

He urged, in order to avoid causing pain and to ensure speedy success, the necessity of thoroughly insulating the needles, except, of course, at the points, and the employment of pressure on the cardiac side as well during as in the intervals of the operation.

6. Remarks on the history and composition of the Treeak Farookh, by J. J. Wood.

VI.—*Exhibitions of Anatomical or other Drawings, original Diagrams, Models, Instruments, Drugs, &c.*

Two pieces of work were exhibited by Mr. Wood, one representing the liver, the other the boundaries of the inguinal canal. They were a compound of drawing and model, and could be easily made by the student himself.

Mr. Gorman exhibited a very complete case (private property,) containing the instruments, apparatus, and medicines necessary to the accoucheur. He also presented for inspection another case, complete in every respect for the midwife. They were both made according to his instructions in England.

Several medicine chests were shown to the Society by Mr. Wood; also a model of an *energent portable* one; the latter being a combination of pocket case and pouch. He recommended it to be made of leather in such a way that it could be either strapped round the waist or rolled up like a mattrass; thus possessing advantages over the heavy, unwieldy wooden one during an epidemic or while travelling.

A number of Indian drugs were also presented for examination by Mr. Wood, in connection with his lectures on that subject.

The New Sydenham Society.

THIS Society has just completed its seventh year. The Council have most efficiently performed their duties, and the high reputation which the works issued by the Society maintain, is a proof of the judgment which has been used in their selection for publication. The first object of the Society, viz., "the publication of translations of Foreign Works, Papers, and Essays of merit," has certainly been hitherto most effectively carried out; and there can be no doubt that there have been placed in the hands of the members some very valuable works, which most probably would never have appeared in an English dress, had it not been for the existence of such a Society as this. For instance, it is improbable that any Publisher would have undertaken the risk of the issue of translations of such works as Frerichs on Disease of the Liver, 2 vols.; Caspers' Forensic Medicine, in 4 vols.; the "splendid monograph" of Donders on the Anomalies of Accommodation and Refraction of the Eye; Van der Kolk on the Minute structure and Functions of the Spinal Cord and Medulla Oblongata, &c., &c. And even had their publication been undertaken, it is certain that they could not have been purchased at anything like their present small cost to members of the Society:

The following is a complete list of the works already issued.

For 1859.—*First year.*

1. On Syphilis in Infants. By Paul Diday. Translated by Dr. Whitley.

2. On the more important Diseases of Women and Children, with other Papers, by Dr. Gooch. Re-printed with a Prefatory Essay by Dr. Robert Ferguson. *With woodcuts.*

3. Memoirs on Diphtheria. Selected and Translated by Dr. Semple.

4. On the Minute Structure and Functions of the Spinal Cord, by Professor S. Van der Kolk. *With lithographs.* And by the same author:—

On the Minute Structure and Functions of the Medulla Oblongata, and on the Proxminate Cause and Rational Treatment of Epilepsy. Translated by Dr. Moore.

"This volume alone, illustrated as it is by such admirable engravings of the anatomy of the nervous system, is worth the whole annual subscription."—*British Medical Journal.*

5. Experimental Researches on the effects of loss of blood in inducing convulsions, by Drs. Kussmaul and Tenner. Translated by Dr. Bronner.

On the Process of Repair after Resection and Extirpation of Bones, by Dr. A. Wagner. Translated by Mr. T. Holmes. *With woodcuts.*

Three Memoirs on Glaucoma and on Iridectomy as a means of Treatment, by Professor von Gräefe. Translated by Mr. T. Windsor.

For 1860.—*Second Year.*

1. Memoirs on Abdominal Tumours and Intumescence, by Dr. Bright. With a preface by Dr. Barlow. *Numerous woodcuts.*

2. A Clinical account of Diseases of the Liver, by Prof. Frerichs, Vol. I. Translated by Dr. Murchison. *With colored lithographs, and numerous woodcuts.*

3. A Year-book of Medicine and Surgery, and their allied Sciences, for 1859.

4. A Fasciculus of an Atlas of Portraits of Skin Diseases; comprising three Plates, illustrating—

Favus; Tinea Tonsurans; Lupus Exulcerans.

For 1861.—*Third Year.*

1. A Hand-book of the Practice of Forensic Medicine, based upon personal experience, by Dr. I. L. Casperf, Vol. I. Translated by Dr. Balfour, of Edinburgh.

2. Czermak on the Practical uses of the Laryngoscope. Translated by Dr. Gibb. *Numerous woodcuts.*

On Thrombosis of the Cerebral Sinuses, by Professor von Dusch. Translated by Dr. Whitley.

Van der Kolk on Atrophy of the Brain. Translated by Dr. Moore. *Four lithographs.*

Radicke's Papers on the Application of Statistics to Medical Enquiries. Translated by Dr. Bond.

Esmarch on the uses of Cold in Surgical Practice. Translated by Dr. Montgomery. *Woodcuts.*

3. A Year-book of Medicine and Surgery for 1860.

4. A second fasciculus of the Atlas of Portraits of Skin Diseases. Three plates, illustrating—

Psoriasis Diffusa; Ichthyosis; Lupus Serpiginosus; Alopœcia areata.

For 1862—*Fourth Year.*

1. The Second Volume of Frerichs on the Liver.

2. A Year-book for 1861.

3. The Second Volume of Casper's Forensic Medicine.

4. A third fasciculus of the Atlas of Portraits of Skin Diseases. Three plates, illustrating—

Lupus Scrofulosus; Herpes Zoster Frontalis; Molluscum Contagiosum.

For 1863.—*Fifth year.*

1. The Aural Surgery of the present day, by Dr. Kramer. Translated by Dr. Power. *Woodcuts.*

2. A Year-book for 1862.

3. A Guide to the Qualitative and Quantitative Analysis of the Urine, by Drs. Neubauer and Vogel. Translated by Dr. Markham. *Lithographs and woodcuts.*

For 1864.—*Sixth year.*

1. The Third Volume of Casper's Forensic Medicine.

2. On the Anomalies of Accommodation and Refraction of

the Eye, with a preliminary Essay on Physiological Dioptrics, by Dr. Donders. Translated by Dr. Moore.

3. A Year-book for 1863.

4. A fourth fasciculus of the Atlas of Portraits of Skin Diseases. Two plates, illustrating—

Morbus Addisonii; Leukoderma.

For 1865.—*Seventh year.*

1. The Fourth Volume of Casper's Forensic Medicine.

2. A Year-book for 1864.

Other works to follow, probably—

Griesinger's Manual of Mental Diseases.

And a fifth fasciculus of Plates of Skin Diseases.

The whole of these works are in stock and can be obtained by new subscribers. Mr. Chipperfield, the Honorary Local Secretary for Madras, has on hand several complete sets from the year 1860, and can at once supply subscribers; and he will obtain the five volumes for 1859, for any gentleman who may desire to possess them.

Should an intending subscriber not care to commence his subscription until the present year (1866) he can still obtain the plates of skin diseases hitherto published, by the payment of thirty-six shillings for the four fasciculi.

The subscription is one guinea per annum, payable in advance on the first of January. Present members would do well to induce their friends to subscribe, as all additional subscriptions will go to multiply the number of works issued, for the Society fully meets the expenses with the number of members now on its books.

Mr. Chipperfield will be happy to receive the names and subscriptions of new members, as he is anxious to increase his list.

Arrangements have been made for the receipt of the Society's publications which renders the cost of freight a mere trifle, viz., from three to six annas per volume. Up-country subscribers must bear the additional cost of the transmission of the volumes from Madras to their stations. The plan hitherto pursued has been to pack them carefully in wax-cloth and dispatch by book-post. The postage varies from two to five annas per volume.

Order of the Madras Government on the Report of the Civil Hospitals and Dispensaries throughout the Madras Presidency, for the year 1864.

The above Report and its appended extracts refer to the operations of the Civil Hospitals and Dispensaries throughout the Presidency for the year 1864, but the statistical information therein contained, as to the number of persons under treatment, is still open to doubt, under the causes which led to the alteration of the heading "treated" to "seen and prescribed for," referred to in the Principal Inspector General's last report, but which only came into effect late in the year. The reports of future years will be free from this defect.

2. The statistics, however, show that there has been very little alteration in the gross number of persons under treatment, an increase of 8,732 in the number of out-patients being, in some degree, counterbalanced by a decrease of 1,057 in the number of in-patients, the latter being evidently the result of economical measures rendered necessary by the withdrawal of Government support from Provincial Institutions.

3. The General Hospital, the Government observe, is not expected to be ready for occupation until some time in the year 1866.

4. The Government are glad to find that the duty of providing for the expenses of their own local Dispensaries is being more and more recognized by the Mofussil communities, and that the year has seen so large an increase of the capital of these Institutions, which has risen from Rupees 1,64,806-13-6 to Rupees 2,95,482-10-7; while, of this, Rupees 2,34,780-12-4 is bearing interest. The charge to Government on account of the Mofussil Dispensaries has been reduced by Rupees 15,224-5-11, or to Rupees 71,337-4-11.

5. The Government agree with Dr. Cole in thinking that the time has now come for considering the mode in which these large sums should be invested. They do not forget that these funds are the product of private benevolence, and that they are not directly subject to Government control; but they still consider that, having respect to the fact that the Dispensaries generally receive from Government the services of a Medical Officer and medicines free of cost, they may, with propriety, insist upon the adoption of a course which will be to the benefit of the Institutions. They, therefore, resolve to instruct Collectors throughout the country to intimate to the various Committees for the Dispensaries, that the Government consider that monied capital accumulated in their hands should not be invested, either with private persons, or with Banks or other Agencies, but that as the accumulations may from time to time

amount to more than Rupees 1,000 in excess of current requirements, they should be invested in Government Securities.

6. The large collection for the Tinnevelly Dispensary has already been favorably noticed by Government.

7. The Government would be glad to believe that Dr. Cole's anticipations, "that the time is not far distant when every Talook in the Presidency will have a Medical Charity ministered to by an educated Native Doctor," were not too sanguine; but they have no hesitation in giving it as their opinion, that no more likely step to ensure this result can be taken, than that to which Dr. Cole refers in his 18th paragraph, viz., the training up, in local hospitals, of native youths, inhabitants of the District, in a knowledge of the treatment of diseases; and they view with very great approval the advance which has been made in Madura, and one or two other places, towards attaining this object.

8. The probability of ensuring medical aid for themselves and in their own neighbourhood, will most likely be necessary as an incentive before the inhabitants of the remote parts of districts will consent to tax themselves for the benefit of hospitals. The labors of the vaccination establishments, who will, so far as in them lies, without interfering with their legitimate duties, give the benefit of their general medical skill to those among whom their tours may extend, will, the Government doubt not, assist in developing a readiness to accept, and anxiety to obtain, the assistance of qualified Medical practitioners.

9. With respect to the different local Institutions, the Government proceed to remark upon those which call for special notice.

10. *Calicut.*—The Government consider that the wealthy district of Malabar should be able to make greater efforts than are apparent from its financial statement. The expenditure has exceeded the income (which includes donations) by a sum almost as large as the balance on hand at the close of the year; so that another year will probably show no balance. The Government will not object to allow an estimate to be prepared in the Department Public Works for the repairs needed to the hospital.

11. *Chicacole.*—The removal of the Police from this Dispensary should be at once effected. A small house should be rented for the purpose, if no other arrangements are possible, and the Government consider that the Police Funds should bear this charge, and that it should not be, as it now is, practically thrown on the private benevolence of the district.

12. *Chittoor.*—The plans of the new hospital at this place are now before Government. The question of making use of the stones, alluded to by the Civil Surgeon, will be considered in the Department Public Works.

13. *Coimbatore.*—The remarks made in reference to Chicacole, on the subject of Police accommodation, will apply to this Dispensary also. The Government see no objection to the adoption of Dr. Davis' proposal for a Lying-in-Hospital. There can be no additional claim on Government on account of it.

14. *Coonoor.*—The Government do not consider that the circumstances of the Kotagherry station are at present such as to render the building of a Dispensary necessary.

15. *Cuddapah.*—The Government are glad to find that there is a prospect of an endowment for this Dispensary.

16. *Guntoor.*—They will be prepared to sanction the execution of the slight repairs necessary to this Dispensary in the Department Public Works on the receipt of an estimate.

17. *Vepery.*—The establishment of a separate ward as a Lock Hospital seems to have been a judicious step.

18. *The Lying-in-Hospital* continues to extend its sphere of usefulness. The Government notice with pleasure the large increase of cases treated.

19. *Madura.*—The great and spreading desire for European medical aid in this District is cause for much satisfaction. The Government have no objection to the proposed plan for selling European medicines, if the Principal Inspector General, Medical Department, considers it practicable to supply medicines, on payment, in sufficient quantity.

20. *Manaargoody.*—The progress of the Lying-in-Hospital at this station, and of the pupils, is satisfactory.

21. *Mangalore.*—The remarks on the treatment of the Police in the hospital, made under Chicacole, apply to this place. Immediate steps should be taken to rent a separate building for a Police sick ward, at the cost of the Police Department.

22. *Masulipatam.*—The Government have already sanctioned the repair, at the public cost, of the Dispensary, which was much damaged by the late cyclone. The arrangement made for the accommodation of the Police is approved, and should be carried out elsewhere.

23. *Ootacamund.*—The attention of the Inspector General of Police will be called to Dr. Smith's statement as to the Police clothing, and he will report to Government how the evil complained of may be remedied.

24. *Paliport Lazaretto.*—It has been resolved to abandon this building, and orders have already been issued for the provision of a proper hospital in a more convenient position.

25. *Rajahmundry.*—The Government trust that the Civil Surgeon's fears for the stability of this Institution are not well grounded, and that the subject of its support will be taken up by the Government official of the District.

26. *Tranquebar.*—The Government share Dr. Cole's difficulty in understanding why this Dispensary should be so poorly supported, while other Dispensaries in the District have been so generously upheld. The subject is one which may well engage the attention of the Collector.

27. *Vizagapatam.*—The energetic action of the Municipal Association is most satisfactory, and the general recourse to the Dispensary for relief is subject for congratulation.

28. It remains for Government to notice the subject of the expenditure of the Civil Hospitals at the Presidency.

29. The total expenditure on these Institutions was, in 1863, Rs. 1,68,113-0-4, from which sum 4,500 Rupees were to be deducted on account of Hospital stoppages. In the year 1864, the total amount of stoppages and sale proceeds of old articles was Rupees 5,190-1-10 ; but although the year was a decidedly healthy one, the expenditure reached the amount of Rupees 1,84,285-8-10 ; or the gross cost of this year shews an excess over that of last year of Rupees 16,172-8-6—a sum nearly the same as the reduction upon the Provincial Dispensaries (Rupees 15,224-5-11), and not much less than one-fourth of the whole expenditure upon the latter named Institutions.

30. The collection of private contributions was confined to one Dispensary (Vepery), and amounted to Rupees 108-12-0, the movement having been set on foot shortly before the close of the year ; but it is stated that Rupees 60 is being raised monthly, the monthly expenditure of the Dispensary, after deducting the cost of Medical subordinates and European medicines, being Rupees 664-10-6, or rather more than eleven times the contributions.

31. For convenience of reference, the total expenditure on each of the Presidency Institutions is shewn in the margin. The Asylums, male and female, may be excluded from the account. The expenditure upon them is chargeable as much to the Provinces as to Madras, and the removal of the Asylums to the Neilgherries will remove the charge also. Moreover, the character of the Institutions is essentially different to that of Hospitals. The Lunatic

	RS.	A.	P.	RS.	A.	P.
General Hospital.....	82,756	2	4			
Native Infirmary....	16,072	2	8			
				98,828	5	0
Black Town...........	786	5	11			
Chintadrepettah.....	1,611	7	0			
Triplicane............	5,265	13	1			
Vepery................	9,588	15	4			
				17,252	9	4
Eye Infirmary........	21,802	12	3			
Leper Hospital.......	9,218	4	4			
Lying-in-Hospital...	20,297	5	2			
				51,318	5	9
				1,67,399	4	1
Male Asylum.........	835	13	11			
Female do.	715	9	9			
Lunatic do.	20,350	12	11			
				21,902	4	7

Asylum is also not properly a Presidency Institution. Its location at Madras is accidental, and it receives patients from all parts of the country.

32. The removal of these charges diminishes the cost of Presidency Institutions proper, to Rupees 1,67,399-4-1, of which Rupees 98,828-5-9 is the cost of the General Hospital and Native Infirmary (classed with the General Hospital, as it is proposed to build a Native General Hospital of which this may be taken as the present representative); Rupees 17,252-9-4, of the Dispensaries proper (the Dispensaries attached to the Lying-in-Hospital and General Hospital have been in this statement incorporated with the Institutions themselves, although in the Report they are separated); and Rupees 51,318-5-3, of the Hospitals for special purposes—the Eye and Lying-in-Hospitals, and the Leper Hospital.

33. Four-sevenths of the charge for the Eye Infirmary consists of the salary of the Superintendent, who performs other important duties in the Medical College. The large expenditure of Rupees 4,122-0-4 on "other charges" needs explanation. It is greater by Rupees 1,300 than the same item in the General Hospital.

34. The expenditure on the Lying-in-Hospital, although there can be no question as to the advantages of such an Institution, is one of which only a small portion is absolutely a *necessary* charge. Of the whole number (1,426) of women delivered, the labor in 1,218 cases is stated to have been natural, or presented no difficult features. The Government abstain in this place from commenting on the expenditure of this useful Institution, and will reserve their observations for the report furnished by the Principal Inspector General and now under consideration, making the one remark that this is an Institution in which of all others diet fees may properly be charged to patients. The cause of entry to this Hospital is not unforeseen as in the case of ordinary sickness. The patient is, in all cases, a woman, and is seldom, except in the lowest classes, a bread-winner, and her husband must have supported her out of Hospital had she not been admitted.

35. The Leper Hospital is an Institution from the charge for which the Government cannot hope to relieve themselves. To secure its economical management is all they can expect.

36. The Dispensaries need not be reviewed one by one. When the proposed Native Hospital is complete, the Government will probably be able, in great measure, to relieve themselves from the charge for what will then become mainly local Charities. Their retention as Dispensaries for out-patients only, will probably be advisable; while the provision at them of proper means of transport for patients needing treatment as in-patients in one of the General Hospitals, will probably secure every needful purpose, while it will

also obviate the danger of the General Hospitals becoming confined in their operations to their own immediate neighbourhood as regards pauper patients. At Dispensaries for out-patients, the subordinate Medical Staff will only be small, and the expenditure for other purposes, exclusive of medicines, will be comparatively little; but whatever it may be, the Government will no longer be able to allow its incidence on Imperial revenues.

37. The Native Infirmary will, on the provision of the Native General Hospital, be abandoned; it is therefore unnecessary to refer to it here.

38. The matter referred to at the close of Dr. Cole's report, viz., the report of the Committee appointed by him to examine the expenditure of the General Hospital, and subsequently of the other Civil Hospitals at the Presidency, will be separately disposed of, and need not to be mentioned here.

39. The Government desire to call Dr. Cole's attention to the paging of the report and its appendices. In fact, the so-called appendices are a most material part of the report, and it is unnecessary that the report of 11 pages should alone be paged with Arabic numerals, while the appendices of 105 are paged with Roman numerals. The paging may with advantage be consecutive, and in Arabic numerals.

(True extract.)

A. J. ARBUTHNOT,

Chief Secretary.

The Pay of Civil Surgeons.

Those of our readers who are interested in the matter will be glad to hear that there is some prospect of a settlement of the claims of Medical Officers in Civil employ that they be placed upon a footing of equality with their, at present, more fortunate brethren in charge of Regiments.

A mixed Committee of Medical, Political, and Financial Officers is now sitting at Calcutta, to consider some of the questions left open by the last Medical Despacth of Sir C. Wood. Madras is represented by Mr. Cornish, whose official position necessarily has placed him in possession of all the facts which can furnish data for the conclusions at which the Committee are expected to arrive, as regards this Presidency.

We believe that the chief points to which the attention of the Committee has been directed, are—the adjustment of Civil Medical salaries, and how far and in what way the services of Uncovenanted Medical men may be availed of.

We trust that the recommendations of the Committee may be such as in every way will satisfy and gratify the Civil Surgeons; and that they will be cheerfully acceded to, and immediately acted upon "with retrospective effect."

The Madras Medical College.

The following changes have taken place in the staff of the Madras Medical College:

Dr. G. Bidie has accepted the Professorship of *Botany and Materia Medica*, vice Dr. Montgomery, resigned and on sick leave to Europe.

Dr. W. H. Harris has been appointed Professor of *Midwifery and the Diseases of Women*, vice Dr. Aitken, vacated, as ill-health compelled him to proceed to Europe a second time within three years.

Mr. Chipperfield is acting Professor of *Medicine and Clinical Medicine*, vice Mr. Blacklock, on sick leave.

Mr. Furnell is acting Professor of *Anatomy and Physiology*, vice Mr. Chipperfield, on other duty.

The Army and Navy Medical Department.

(From the Overland Mail, December 11th, 1865.)

"The Committee appointed to inquire into the causes which have, for the last few years, materially tended to prevent a high class of professional men from entering the Medical service of the Army and Navy, and to make a report which may, it is hoped, remove all existing difficulties, consists of the following:—Vice-Admiral Sir Alexander Milne, Major-General Lord F. Paulet, K.C.B., Sir James Gibson, K.C.B., Director General of the Army Medical Department, Dr. Bryson, C.B., Director General of the Navy Medical Department, Captain Galton, Mr. Busk, and Dr. Markham. Mr. Robert Bell, of the Admiralty, is acting as Secretary to the Committee."

We extract the following from the "Medical Times and Gazette" of 9th December 1865 :—

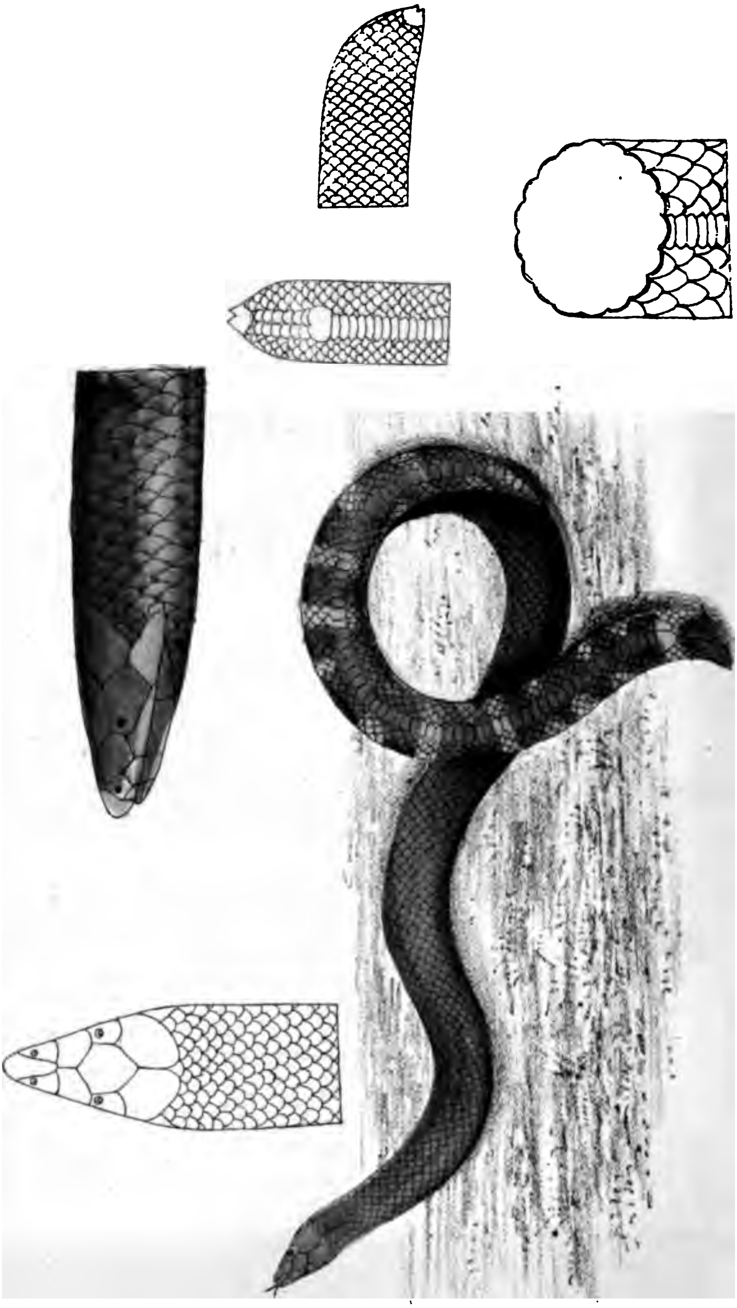
"We recently informed our readers that a Commission was sitting at the Admiralty to investigate into the causes of the grievous unpopularity of the Army and Naval Medical Services ; we gave them its constitution, and the names of the President and Members, and we stated that the examination of witnesses had commenced. We now learn that the Commission has examined all the witnesses it deemed requisite, and we may, therefore, soon expect to hear the results of the deliberation. As far as the Civil Medical members are concerned, there can be no doubt as to their anxiety to do justice to our Profession and to those members of it in the public services. Mr. Busk is an eminently conscientious and able man, fully acquainted with the requirements of the services, sensible of the great changes which have taken place in the education and social position of the men who now study Medicine, and, above all, fully alive to the lamentably inferior quality of the candidates who are seeking to serve Her Majesty. Dr. Markham, at the cost of much time and labour, had thoroughly sifted the question and must have satisfied himself that the grievances which have been so long and so loudly proclaimed have a firm foundation. We have no doubt, therefore, that they have earnestly striven to perform their duty, and they deserve the hearty thanks of the Profession and of every soldier and sailor for their efforts. A private Commission is, no doubt, much less satisfactory than a public one ; however, a great many eyes have been turned to that Committee-room in the Admiralty. Many have been the exclamations that the whole thing was a sham,—an attempt on the part of the Government to hoodwink the public by an appearance of something being done, and to delude the Profession into entering the public Service by false hopes. We have heard much dissatisfaction expressed at the class of witnesses brought forward. Honorary Physicians to the Queen, senior Inspectors-General, and a Surgeon notoriously favourable to the Horse Guards, could hardly afford the Commission an adequate and fair view of the existing discontent of other ranks. Had these been all the witnesses, the Commission might have ceased from its labours, but the civil element did not probably allow these to be all. As a class, the Army and Naval Assistant-Surgeons are more affected than any other rank, yet from what we can learn, they appear to have had no voice in the matter, for none were summoned as witnesses. It surely would have been well to have asked some of the men that have resigned the services, their reasons for doing so, and to have inquired of the many who are only retained by the appointment of this Commission, what their grievances were. It ought to be remembered that the Army inspectorial ranks personally know nothing of the complaints made by Regimental Surgeons, because these complaints have only arisen of late years, and were due to the working of the Medical Warrant.

We have even heard old regimental Surgeons say that they were infinitely happier in their regiments under the old *régime* than now. For the state of things in the navy, we would refer to a letter published in the last number of the *United Service Gazette* by a late Assistant-Surgeon, which letter, by the way, we commend to the perusal of the Commission. It is not the calumnious emanation of some coward, sheltering himself under an anonymous appellation; but it is the outspoken avowal of a man who gives his name as the guarantee of his sincerity and truthfulness. Can it be wondered that the navy urgently wants fifty or sixty men, and only gets three or four; or that professional *gentlemen* refuse to remain in it? The army Medical service, bad as it is, is certainly better than this. Thirty or forty years' service as an Assistant Surgeon, on a maximum pay of 13*s*., is, at any rate, preferable to the loss of self-respect entailed by service in some of the ships of our navy. Still, the Army Medical Department has nearly exhausted the number of those who care for the sweets she offers, and her last batch of Medical aspirants exceeded all the others in the extent of their—ignorance!

We believe, then, that something must be done at once. The two services together require, *at the very least*, upwards of 100 men, and the Government may be sure they will not be forthcoming unless some changes are made; at least, if they be, the number of our profession will have to accept the lot they deserve, and can expect no sympathy.

We never want to see Medical men transformed into mere officers; we have no sympathy whatever with the man who thinks he can enhance his importance by an overweening love and display of military rank or dress. We heartily dislike—and all the really good men of both services do the same—that very small, but very noisy, class of men who enlarge the "officer" to such a degree as to overshadow and conceal the "Medical" prefix: men whom Thackeray rightly fixed on as a type of the military snob. Doctors are not wanted in order that they may look "nice" in their uniform or make a "smart" appearance at parades, but they are required to treat and cure the sick soldier at the Hospital, and the more they are encouraged to consider the latter as the sphere of their duties and the less their presence is required at the former the better. What we want to see is *well-educated gentlemen in our services*. These cost more, but they are well worth the outlay. Ability, industry, and professional zeal *do* consort more than is generally believed with dignity, urbanity of disposition, and a contempt for mean and false semblances of military rank. Ambitious men of great talent will, nineteen times out of twenty, seek to remain in metropolitan or large towns to practise their profession, and acquire fame and wealth in connexion with large Hospitals and Medical schools. But be the talent and ambition ever so great, it generally requires great patience, enduring courage, and some means to

command success, and some gladly shun the trial. T
enter the public services, and they will be very few, becau
in intellect, like giants in stature, are very rare and costly,
are quite aware of the fact. But there are very many capit
men above the average, men who would not rest in a co
county town without getting on the staff of the Hospital,
would in time command means and position. Now,
number of these would, under happier auspices, turn their
to the Army and Navy. Should the services be so fortun
procure this class of men, sure we are that they will pro
acquisition, valued as much by the admiral as the common
by the general as the private soldier."



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PART I.

ORIGINAL ESSAYS.

Art. IV.—*Notes upon the Snakes of the Madras Presidency.* By Captain R. H. Beddome, Officiating Conservator of Forests.

(*In continuation of Art. IV. Vol. VI.*)

Description and Plate of a New Species of Snake of the family Uropeltidæ from the Pulney Mountains.

Uropeltidæ.

Genus. Plectrurus.

Plectrurus Pulneyensis.—(R. H. B.)

Rostral rather obtuse, produced back between the nasals and touching the frontals, nasals, not meeting. *Eye small,* in front of the ocular shield. *No supra-orbitals.* Vertical 6-sided, occipitals rounded behind, 4 upper labials. Scales round the neck 19, round the body 17; subcaudals, male

about 12, female 6—8. Tail compressed, ending in a small spinose keel, more or less bicuspid. Scales of the tail all smooth. Color uniform earthy brown, a lateral bright yellow streak from the labials continued down each side of the trunk about an inch or an inch and a half, a few minute yellow specks on the back, belly with broad, bright, yellow transverse bands, very regular as to number and shape, some yellow markings about the vent and tail. (The brilliant yellow fades in spirit.)

Very abundant on the Pulneys at an elevation of 7,000 to 8,000 feet, where it is dug up from under the turf, and often appears on the surface of the ground during the rains.

This species and the Plectrurus Wynadensis, described by me in a former paper in this journal, differ from the typical form of "Plectrurus" in their much smaller eye and in the absence of supra-orbital shields, in fact they come very close to the genus Rhinophis, from which their compressed tail sufficiently separate them. They will, perhaps, have to be placed in a genus between "Rhinophis" and "Plectrurus."

Art. V.—*On Some of the Dangers of Phymosis.* By Henry C. Brodrick, M.D., Assistant Surgeon, 1st Central India Horse.

Within the past twelve months, I have had to treat several cases of Phymosis, in two of which the consequences of the closure of the preputial orifice proved serious, leading in one to rupture of the urethra and extravasation of urine with extensive sphacelation of the parts, and in another to the formation and lodgment of no less than forty calculi, weighing altogether 68 grains, in the sac between the prepuce and the glans penis.

It seems to me that Hindoos are very liable to diseases and accidents occurring to the prepuce, and that this is attributable to their neglect of cleanliness. It is probable, too, that the follicular secretion of the part is more active in Easterns, than in other races, and that the wholesome practice of circumcision amongst Jews and Mahomedans was dictated in a measure by the knowledge of this fact, and a recognition of its importance.

During ten years' experience of practice amongst natives of

India, I have repeatedly been called upon to slit up the prepuce, in consequence of some diseased condition the integument concealed and fostered, and in the General Hospital at Indore my native doctors often, on their own responsibility, followed my example in suitable cases.

It is bad surgery to slit up the foreskins of patients indiscriminately, because there is a sore beneath, which the Surgeon is unable to get a look at: in by far the majority of cases, cleanliness, the use of weak astringent injections, and the application of cold will reduce œdema and inflammation sufficiently to admit of an inspection of the sore, previously hid from view, and which will often be found cicatrizing in consequence of the same treatment.

In one case only did I consider it necessary to remove a ring of the prepuce. It was the case of a young boy, the son of a Cashmerian Pundit, who had almost complete atresia of the orifice, and a very elongated foreskin.

In this case, inflammation had sealed up the orifice, with the exception of a very minute aperture, which was liable to be obstructed by a plug of secretion.

When the bladder contracted, the first gush of urine would distend the preputial sac almost to bursting, and then, if the *vis a tergo* proved insufficient to dislodge the plug of secretion, the boy was obliged to force the passage with a bit of stick or straw.

He soon recovered from the slight operation rendered necessary, namely, amputation of a ring of the redundant integument, and, tearing up to the corona, of the mucous membrane, after the manner of the Jewish operators.

Chelius writes—" If the prepuce have not an opening, it becomes distended by the collecting urine to an oval transparent swelling, and the retention of urine may be fatal if assistance be not afforded in proper time."* Neither Chelius nor his admirable translator and annotator give instances of fatal consequences of this atresia, but it is most likely that Chelius had the danger of extravasation in view when he penned the above passage.

I proceed to notice a case of this alarming accident that occurred during the present year in my practice.

Kusroo, a Kumhar (tiler) by caste, aged 25, is brought to

* South's Chelius, Vol. ii. p. p. 343.

the Cavalry Hospital, Augur, on April 8th, suffering from retention of urine which has existed for 30 hours.

I found him in the following condition:—There was enormous œdema and a sphacelated appearance of the prepuce, the orifice of which was closed by a crust of purulent secretion. The scrotum was greatly distended by an extravasation of urine, which extended backwards over the perinæum, forwards over the entire scrotum and penis, and laterally to either groin.

There was a large hard swelling in the hypogastric region, extending from the pubes to the umbilicus, tender to the touch and dull on percussion. The man was in great agony and in an almost typhoid condition.

His story was, that he had had a purulent discharge from the urethra for the last three years, he had not had stricture, but the present retention had come on suddenly, thirty hours before his admission. This was all the account he could give of himself.

I first passed a director through the occluded preputial orifice up to the glans, and on this divided freely the enormously distended integument. The glans appeared quite healthy. Urine began at once to distil from the wound.

A large catheter was now passed with ease, but not one drop of urine flowed, it was withdrawn and twice again re-passed, but the same negative result followed.

Whilst the instrument was *in situ*, I made out, from an examination by the rectum, that the instrument had glided from the mesial line into the ischio-rectal fossa; possibly it had followed the line of rupture and extravasation.

An elastic catheter was now passed with great care, and on removal of the stilette I had the great satisfaction of seeing the urine begin to flow from the orifice of the instrument. It flowed very slowly at first, for the bladder was half paralysed, but the position of the patient being altered the stream improved. The urine was not mixed with blood, and from this I concluded that the urethra, and not the bladder, had given way.

At the end of micturition a few drachms of thick white pus, or mucus mixed with urine, flowed out.

The catheter was then tied in the bladder, and four deep incisions were made into the scrotum, and two in the perinæum, from all of which urine commenced to distil.

A large poultice was applied over all, and a draught containing a drachm of Tinct. Opii and a drachm of Aromatic Spirits of Ammonia given.

Two days after it was found necessary to cut into a swelling that had formed over the pubes, and to give the patient a purgative. In all other respects the patient was doing very well.

An opiate was given each night, and rum and milk freely administered throughout the progress of the case; the local treatment consisted of the constant irrigation of the parts with a diluted solution of Condy's fluid.

The anterior part of the scrotum entirely sloughed away, and a great portion of the posterior too, the testicles being entirely exposed with their spermatic cords. The greater part of the integument of the penis too came away, but the glans and the substance of the organ were preserved.

The catheter was frequently washed out with warm water from a syringe, which always relieved any tenderness there might be over the region of the bladder.

The vast wound was dressed with tow kept wet by the constant flow of Condy's fluid from a syphon, and this dressing was removed every morning by means of a stream of warm water playing on the part from a syringe. The patient was kept scrupulously clean, and was liberally fed, and he never had a bad symptom.

Eight days after admission all the sphacelated parts had come away, and a florid granulating wound of huge extent remained.

The catheter was kept *in situ* for 10½ days, and was found to be encrusted with phosphatic deposit on withdrawing it.

I now discovered that an ulcer had eaten through the corpus spongiosum at about 2¾ inches from the meatus urinarius: a probe passed in at this ulcer passed out at the meatus.

The smarting of the urine, as it flowed from this hypospadias over the granulating wound, caused him much suffering, but presently the orifice closed and he ceased to complain.

Was this ulcer the site of the original rent in the urethra through which the urine was extravasated?

By June 19th, seventy-two days after his admission, the man was discharged cured to all intents and purposes. The

shabby remnants of his scrotum healed soundly over the testes, and the unprotected corpora cavernosa found a covering for themselves. The man was discharged fat and sleek, and perfectly satisfied with the results.

I again quote from Chelius:—"When the orifice of the prepuce is smaller than that of the urethra, the urine cannot flow in its usual stream, part of it collects under the prepuce, distends it, and can only completely be voided by pressure. By the urine thus retained, and becoming putrid, the prepuce is inflamed, often lengthens and becomes hard; and even *stony concretions* may be formed between the glans and the prepuce."

I proceed to describe such a case, in which such "*stony concretions*" were formed, and which came under my notice during last April.

Koosheal, an Aheer by caste, aged 35 years, applied for relief at the Cavalry Hospital, Augur, on April 17th, complaining of stoppage of urine.

On examination it is seen that there is a phymosis and considerable swelling at the end of the penis.

At the site of the preputial orifice a pink coloured cicatrix is observed, in which is a very minute aperture. This pink cicatrix was left after an operation performed on the man by some Hakeem, five years before, for the relief of phymosis.

Through the minute orifice in this scar a probe was passed, which displaced a plug of secretion.

He said that he was scarcely ever able to void his urine now, without previously poking a bit of stick into the orifice, to remove the plug that formed in that narrow outlet.

The probe pushed through the orifice strikes upon something that feels like gravel, and on feeling at these gravel-like bodies through the prepuce, they can be moved on and over each other, and convey to the finger the idea of shells or pebbles.

The man informed me that he had noticed this "*kunkur*" years before, and that the pieces had grown larger and more numerous by degrees.

The minute orifice was pricked with a bistoury, and a director passed, on which the prepuce was freely divided.

Then with a syringe, a scoop, and the fingers, I turned out forty calculi of various sizes, bearing on their surfaces the facets that marked the closeness of their impaction.

The whole weighed 68 grains, the smaller ones were like the seeds of a fruit, or, rather, they resembled the representations of red blood corpuscles, being flattened discs.

There were two calculi much larger than the rest, rather rough as to their surfaces; the larger of these two weighed 26 grains, and the smaller of the two 14 grains, the run of the rest averaged $\frac{3}{4}$ grain each in weight.

The foreskin was found to be much thickened by the growth, apparently, of muscular fibres. It was lined with a very tough mucous membrane, which presented no sacculi, but was whitish and aphthous in places from contact with the calculi.

Four stitches were passed through the divided integument, and cold water dressing applied.

On attempting to pass a full-sized catheter, to see if there were any calculi in the bladder, I encountered a spasmodic stricture at about the membranous urethra, and thereupon I desisted from the attempt until a better opportunity. In the meantime, the wound healed and the man disappeared.

I sent one of these calculi for analysis to S. J. Wyndowe, Esq., Professor of Chemistry, Medical College, Madras, who was kind enough to examine it, and found it consisting mainly of phosphate of lime and a little animal matter.

The calculi, then, were formed *in* the situation when I found them, and were the products of decomposition of the urine, phosphates, and the epithelium and other secretions of the part.

Mr. South, in a note in the work quoted above, (vol. ii. p. 633,) writes:—"In the College (of Surgeons) collection there is a curious case of VINCENT's:—"Numerous small *calculi*, which, with above two hundred others, were removed from between the prepuce and *glans penis* of a very old man. The patient had congenital *phymosis*, the orifice of the *urethra* scarcely admitting the introduction of a common probe. From the presence of the *calculi* the prepuce was distended to the size of a large pullet's egg, and retention of urine was finally produced. On dividing the prepuce, one of the calculi was found completely blocking up the orifice of the *urethra*. The *glans penis* was in a state of ulceration, and a large portion of its substance had been absorbed. The patient had, during many years, occasionally experienced great pain and difficulty in making water, and latterly he had a constant *stillicidium*. The calculi are composed princi-

pally of the fusible compound (phosphate of lime and phosphate of ammonia and magnesia;) most of them have a small nucleus of uric acid; their external surface is varnished over with urate of ammonia. From the composition of the *nucleus*, there can be no doubt but that the greater number of these *calculi* had passed from the *urethra* into the sac of the prepuce; and their irregular form and close adaptation to each other, proves that in this situation they had increased considerably in size by the deposition of the earthy phosphates."

In my case, no such nucleus seems to have existed.

During July last, a Rajpoot cultivator, aged 26 years, applied for the relief of a phymosis, which had caused retention of urine, at my hospital at Augur. The urine had been stopped for the last 24 hours, and the man was suffering acutely from pain in the supra pubic region.

A director was forced through the constricted aperture, displacing the usual plug of secretion, and the prepuce divided when a few drachms of pus flowed out and presently the man made water in a full stream.

Four stitches were introduced and cold dressing applied, and in a few days the man went home quite recovered.

Only about a fortnight ago another case of phymosis applied to me for relief, I proceed to notice it briefly. Golab Singh, Rajpoot, aged 22, suffers from retention of urine. He had voided no urine for 14 hours. The prepuce was found to be much thickened but not much indurated; the orifice was closed by a scab and not a drop of urine could escape. He denies any syphilitic history, but confesses to gonorrhœa, in fact, he has got gonorrhœa at the present time.

For the past two years he had noticed a gradually contracting atresia of the preputial outlet, the origin of which he attributed to the inflammation and swelling that followed a bite of the part by an *ant.*

When making water the urine would distend the prepuce greatly, and, presently driving out the scab or plug of secretion, would be voided.

On slitting up the prepuce, about two drachms of imprisoned pus escaped, and presently the urine was voided in a full stream: there was no stricture of the urethra.

From these cases we see what inconvenience and even

danger may attend atresia of the prepuce, and that a gradually increasing atresia may become a total sealing up of this outlet by an attack of acute gonorrhœa, and may even lead to such a terrible accident as extravasation of urine with its manifold dangers.

One cannot but feel surprised at the urethra giving way before the atresia; old structure yielding whilst new material opposes successful resistance; but it is well to bear in mind that in the above case of extravasation from phymosis the urethral lining membrane was, at the time of accident, as it had been for three years, in a state of inflammation.

ART. VII.—*Note on the Magnetic Oxide of Iron as a Means of Purifying Water.* By J. MAYER, ESQ., Deputy Inspector General of Hospitals, Presidency.

As this substance has lately been brought prominently before the public, and has been much lauded on account of its special action in purifying waters, and as, moreover, a Committee of the National Exhibition have lent the sanction of their names to it as a voucher for the above-mentioned special quality, it appears almost necessary, in a paper of this kind, to offer a few words respecting it, particularly in reference to the two questions of natural and artificial supply.

Magnetic oxide of iron, it is well known, is a natural product found largely in certain localities; but it is very questionable whether it can everywhere be so readily obtained, and in such quantity as to make its use practicable on a large scale. All the reliable information on this head that has been procurable will be given at the latter part of this note, and if it should turn out that this product can only be had here and there and in places at considerable distances from those situations whereat filter beds are to be made, then the only resource will be the artificial product; and, in order to afford a clear view of the practicability of resorting to it, the shortest way will be to give, first, an account of the composition of the oxides, and, secondly, the

mode of preparation, so as to enable any one to manufacture the compounds under consideration.

Every equivalent or 139 grains of the crystalized green sulphate of iron contains 36 grains of the protoxide of iron, therefore 1 lb. avoirdupois or 7,000 grains will contain X = 1,813 grains, or 4 oz. 65 grains of the protoxide, and any other quantity in proportion; but it is not the protoxide of iron that is wanted, it is the magnetic oxides, of which there are two. Now, to understand how these oxides are formed, as well as the reasons for the processes here given, it will be advantageous to set down in order the various oxides of iron with their appellations and formula, it being premised that Fe stands for Ferrum, Iron, and O for Oxygen. Protoxide $Fe\ O$; Sesqui Oxide $Fe_2\ O_3$; these formulæ convey, in short the important information that the protoxide of iron is composed of one combining quantity of iron and one combining quantity of oxygen, and that the sesquioxide is composed of 2 combining quantities of iron and 3 combining quantities of oxygen; this being understood, the composition of the magnetic oxides will be at once evident, their respective formulæ being $Fe_3\ O_4$ and $Fe_4\ O_5$ since it is patent to every one that one atom of the protoxide and one of sesquioxide $\left\{\begin{matrix} Fe\ O \\ Fe_2\ O_3 \end{matrix}\right\}$ when united, equal $Fe_3\ O_4$ *i. e.*, the 1st magnetic oxide, and in like manner it is equally plain, that two atoms of protoxide 2 ($Fe\ O$) and 1 atom of sesquioxide $Fe_2\ O_3$ when united, equal $Fe_4\ O_5$, the 2nd magnetic oxide.

The above compositions having been clearly demonstrated by repeated and careful analyses, they suggested the artificial process, of which the dominant conditions are that the protoxide and peroxide should be brought together in the particular proportions shewn, and in a recent state. How this is effected will be seen in the text of the paper.

Process.

To obtain artificially magnetic oxide of Iron having the formula $Fe_3\ O_4$, such quantity of the green proto-sulphate of Iron, as will afford the required quantity of oxide being taken, the crystals are to be dissolved in pure water; two thirds of the solution thus formed are to be poured into a second vessel; to this portion, which is to be boiled, nitric acid must be added till brown vapours are no longer given off.

The iron contained in this portion is now in the form of sesquioxide, while in the one-third which has not been boiled it remains in the form of protoxide. The two solutions are now to be mixed together; the mixed solutions are then precipitated by the volatile alkali or carbonate of soda, and are boiled; during the boiling the mixed oxides unite and form the black magnetic oxide Fe_3 O_4. To form the magnetic oxide Fe_4 O_5, the processes are precisely similar in all details, except that only *half* the quantity, instead of *two-thirds,* as in the first case, is peroxidized by boiling with nitric acid.

After the details above given, it does not seem necessary to enter further into the question of whether the artificial magnetic oxides can be obtained so readily and economically as to render their use practicable on the large scale; as any process involving accurate weighing, solution, accurate division by graduated measures, boiling and precipitation, besides some expenditure for re-agents, would be inapplicable. The process has, however, been made available for the manufacture of a sufficient portion of artificial magnetic oxide, to test its efficacy as a filtering and purifying agent. The same water in the same quantity was used in each of the experiments recorded in the Table of Results marked Y.

TABLE Y.

The water selected for the following trials was notoriously bad; it was taken from a well in the compound of the Madras Medical College. The quantity experimented on was the 16th of an Imperial gallon.

Previous to any filtrations, one-sixteenth of a gallon was evaporated to dryness, first on a porcelain dish, and finally in a platinum capsule of known weight; it left a total amount of residue = grains 15·08, and after ignition (with the usual precautions) grains 12·52, which was taken as the inorganic impurity present, and the loss (grains 2·56,) as the organic. Nine separate sixteenths of a gallon of the same water were then carefully filtered through the materials noted below; the filtrates were then separately evaporated, and the residues left weighed and set down opposite the filtering material used; these various residues were then ignited, the respective residues again weighed and set down in order, the loss in each case being the organic matter. The figures thus obtained, by being respectively deducted from the

amounts originally present, shewed, by the difference, how much had been separated by each filter material.

A.	B.	C.	D.	E.	F.
Material used for filtration.	Total left after evaporation of filtrate.	Residue after ignition of B.	Difference between C. and B., being organic matter present.	Organic matters amount separated by each filter.	Percentage amount separated.
		Grains.	Grains.		
1. Ordinary filter paper.. ..	= 14·69	12·36	2·33	·23	8 98
2. Swedish filter paper........	= 13·24	12·24	1·63	·93	36·36
3. Clean white sand........	= 15·14	13·09	2·05	·51	19·92
4. Sand and charcoal......--	= 14·93	12·94	1·99	·52	22·35
5. Natural magnetic oxide of iron..	= 14·18	12·49	1·69	·87	34·00 nearly
6. Artificial magnetic oxide of iron.......	= 14·14	12·50	1·64	·97	36·00 nearly
7. Finely divided Mica or talc....................	= 14·22	12·39	1·83	·73	28·51
8. Swedish paper, natural magnetic oxide of iron..	= 13·99	12·37	1·62	·94	36·71
9. Swedish paper, natural magnetic oxide of iron..	= 13·94	12·33	1·61	·95	37·10

A few remarks on the table just given seem to be called for, in order to point atteution, in the first instance, to the differences in the materials employed.

Nos. 1, 2, 3 and 7 are materials to which no other than mechanical action has ever been attributed; by this agency, they separated from one-sixteenth of a gallon of the same water respectively :—

		Grains.
1.	Ordinary paper	·23
3.	Clean white sand	·51
7.	Finely divided mica	·73
2.	Swedish filter paper	·93

These figures, if the original amount of organic matter present in one-sixteenth of a gallon be taken as 100·, give the percentage proportions shewn in column F; thus it appears that of these four mechanical agencies, No. 2 is, by far, the best; No. 7 the next best; and so on, and that out of 100 parts the best mechanical means tried was only able to separate 36·36 parts. Nos. 5 and 6 are materials to which special purifying powers have been attributed. The percentage quantities separable by their means are shewn, in the same column of the table, to be 34·00 nearly and 36·00 nearly, *i. e.*, these special agencies are neither of them quite so powerful as that exercised by the best mechanical means.

Finally, the results of filtration, by mixed agency, as shewn by Nos. 4, 8, 9, shew not only great diversity of results, but that those obtained by means of sand and charcoal (No. 4) require, in order to make such materials effective, certain other precautions which could not be adopted in this or that case without vitiating the first principle of comparative investigation, that, viz., of placing all the substances experimented on under "precisely similar conditions," and it will be observed that in none of these experiments has this canon been departed from. The simplest means, the same sized funnels, and the like quantities of materials were in each instance employed. In no instance have special arrangements, packing, or adjusted pressure been resorted to; but without these means the filtration by double agencies as shewn by Nos. 8 and 9, appears to exceed, in a slight degree the purification that is obtainable by single mechanical agencies. Whether the magnetic oxide of iron acts by its insolubility and sp. gr. in such a manner as to form very minute pores through its mass, or by any special mode of action, has not been investigated by us. The artificial product is a finer powder than the natural magnetic oxide and it acts both singly and in conjunction with Swedish filter paper better than the natural products, which considerations tend to support the idea that, after all, it acts mechanically, and not from its possessing any peculiar purifying power. From a partial examination of Spencer's filtering apparatus, it was evident—1st, that a sponge under a graduated pressure was employed as a preliminary mechanical means of intercepting impurity; 2ndly, that pieces of sponge cut very small were interspersed through the material in the body of the filter. What further special arrangements may have been employed we are unable to say, as it was not thought worth while to destroy the apparatus for the sake of such information; it was sufficiently evident that all the precautions before adverted to and generally deemed necessary in the manufacture of filters had been carefully attended to. With all these advantages, however, the results obtained by its use were above those obtained by the use of Swedish filter paper alone only in the proportion shewn by the figures below:

Swedish filter paper.......1·63
Spencer's filter...............1·60

A further experiment was made to ascertain if double filtration through Spencer's filter and Swedish filter paper

would make any difference in the results. It was found to do so, reducing the quantity of organic matter left present in the filtrate to 1·57, and the amount separated would thus equal ·99, which represented, as a percentage = 39·00 nearly. From this experiment, viewed in connection with what has been previously advanced, we are strongly inclined to look upon filtration generally, (excepting that through various kinds of charcoal, vide note) as essentially a mechanical act; and that the finer the pores of the filter, the more insoluble the filtering material, the greater its specific gravity and the less its liability to be disturbed, the more perfect will be its action. We doubt the utility of any material like sponge either on the small or on the large scale, as, however perfect it may render an apparatus for a while, it is well known that very frequent renewal and careful washing, as well as exposure to the air (ozonization) to get rid of fetid odours is necessary to keep these machines in good order; but, notwithstanding all the objections that we have here urged to particular views relative to modes of action or to forms of apparatus, we think, with reference to the manufacture of filter beds for towns, &c., that table Y shews undeniably that the natural magnetic oxide of iron holds a high place as a filtering agent: by its means, nearly 34 per cent. of organic matter was separated; it is superior to finely divided mica, and only inferior to the artificial magnetic oxide and to Swedish filter paper, both which are inapplicable for all but table or laboratory experiments.

Even with reference to charcoal and its well known power of condensing gases in its pores, it is scarcely necessary to observe that its series of special actions (which generally commence with the condensation of the atmospheric air) are only to be kept up by a renewal of the primary conditions; and that if these be not renewed, its special actions merge into those of a mechanical agent.

Dr. Parkes, in his late work published for the benefit of the Medical Officers at Netley, gives the statement shown in the margin; it will be observed that we have not been able to confirm this statement. The utmost amount of organic matter that we have been able to separate by filtration is less than 40 per cent. and differs widely from 88 per cent. as stated in the work above mentioned.

"Of all these substances, charcoal is the best; it can remove 88 per cent. of organic matters, and 28 per cent. of mineral matter. It has removed 7·48 per cent. of the Chloride Sodium, 8·5 per cent. of the lime salts, and 2·3 per cent. of the Sulphuric Acid (Witt.)"

With reference to the ready procurability of the natural magnetic oxide in various parts of India, we beg to submit such information as we have been able to obtain.

Enquiries at the Government Central Museum have shewn that magnetic iron ore is to be found at many places in the Vellore Talook, &c., vide page 25 of the Catalogue of Articles contributed by Madras to the International Exhibition of Works of Industry and Art held in London, 1862.

By reference to the catalogue of the iron ores of Southern India, it will be found that the following are named as localities from which magnetic iron ores can be obtained :— in numerous villages in the Northern Division of Arcot; in some places in the Bellary District; in many places in the Canara District; in several localities in the Chingleput District; in several places in the Cuddapah District; in some places in Guntoor and Kurnool; from one place in Madura; from 12 different places in Malabar; some places in Masulipatam; from many places in Mysore, Nagpore, Neilgherries, Rajahmundry, Salem, Tinnevelly; but whether it can be had in quantity in all these places is not stated.

In reply to some enquiries casually put to him, Dr. Aitken states that he has seen immense quantities of magnetic oxide at Coimbatore.

Finally, in the Memoirs of the Geological Survey of India, volume iv. part 2, valuable information is to be found in reference to localities in which magnetic oxide of iron is to be met with, and in the appendix to this volume the magnetic iron beds of Kunjamully near Salem are admirably described; they are said to be very extensive, and the supply of ore inexhaustible.

Unfortunately for the purpose considered by the authors of the work quoted, *i.e.*, the manufacture of *iron*, the absence of appropriate fuel in quantity interferes so greatly as almost to interdict it, or if not to reduce any profit obtainable thereby to a minimum. In like manner, the cost of transport from one place to another will, it is apprehended, interdict the use of the magnetic oxide as a material for filter beds, except such places as those in which the oxide in question is found;

3½ Rupees per ton is the price paid by our Porto Novo Company for the carriage of the ore a distance of 20 or 25 miles.

ART. VIII.—*A General and Medical Topographical Report of the Madras District.* By J. SHORTT, M.D., General Superintendent of Vaccination, and late Zillah Surgeon, Chingleput.

THE old Chingleput District forms that portion of the late East India Company's possessions in the Carnatic termed the Jaghire, and formed the first territorial possession of large extent acquired by the Company in 1750—63 from the Nabob of Arcot, for services rendered to him and his father by the Company, and renewed on leases till 1780, when the Madras Presidency assumed the direct management. The District comprises an area of 3,130 square miles extending northward to the Pulicat lake, southward to Allumparva, and westward to Conjeveram. It is bounded on the east by the Bay of Bengal, the Coromandel or Eastern Coast extending about 120 miles: on the west by the Districts of North and South Arcot; on the north, by North Arcot and Nellore; and on the south by South Arcot.

It was formerly divided into ten taluqs, but in the year 1859, it was amalgamated with Madras and formed into seven, six of which form districts, each presided over by a Tahsildar, subject to the Collector and his Assistants; the Treasury being in charge of the Deputy Collector. Madras forms the seventh, or a taluq of itself, and is presided over by the Collector and his two Deputies, one of whom is in charge of the Salt Depôt, and the other the Abkaree, Quit-rent, and Registration departments. Madras, which has a history of its own, is the Capital of the Presidency, and one of the largest cities in Southern India. An area encircling 26½ square miles is under the control of the High Court; with this exception all other parts of this district come under the judicial cognizance of the Civil Judge of Chingleput.

Simultaneously with the amalgamation and reduction in the number of the taluqs, the designation of the District was changed from *Chingleput* to that of *Madras.*

The following table furnishes some particulars regarding the Districts :—

Table giving the names of Taluqs and Kusbah stations, distances between the Taluqs and Madras and Chingleput, with area, number of villages, population, &c., of the Madras District.

	Taluq.	Taluq Kusbah.	Deputy Tahsildar's Kusbah.	Distance from Madras.	Distance from Chingleput.	Area in square miles.	Number of villages.	Population.	REMARKS.
	1. Madras......	Capital of Southern India.			35	..	...	4,27,771	Europeans and East Indians. 16,368 NativeChristians 21,839 Hindoos .... 3,25,678 Mahomedans... 63,886
				Miles.	Miles.				
Collector's Principal Division.	2. Sydapet...	Kusbah..	Poonamallee	Sydapet... 6	Sydapet 30	355	350	1,00,457	
	3. Trivellore.	Do.	Mylapore. ...	Trivellore 30	Trivel- lore ... 40	585	342	1,06,690	
	4. Ponnary...	Do.	...	Ponnary. 25	Ponnary 60	540	298	72,247	
Sub-Collector's Sub-Division.	5. Madranti- cum.........	Do.	Ootramul- loor..	Madranti- cum..... 50	Madran- ticum. 15	650	563	1,35,551	A large village, situated on the Southern Trunk Road.
	6. Conjeve- ram.........	Do.	Streeperma- door.	Conjeve- ram..... 48	Conjeve- ram ... 22	500	464	1,30,860	A large town.
	7. Chingleput	Do.	Triparoor. ..	Chingle- put 35	...	470	444	88,096	

NOTE.—*Kusbah* means the head quarters of the Tahsildar, where he usually resides and has his treasury.

A short account of each taluq may not be out of place here.

2. *Sydapet.*—The village of Sydapet is situated on the northern bank of the river of that name. It lies between Saint Thomas' Mount and Madras, being two miles distant from the former and six miles from the latter. The Collector holds his office here, and a Deputy has charge of the treasury.

The Military Cantonments of Palaveram, Saint Thomas' Mount, and Poonamallee, are within the area of the taluq, Madras being on its northern side. Saint Thomas' Mount is eight miles from Madras and twenty-six miles distant from Chingleput. It is a large and important place, and the head-quarters of the Madras Artillery.

Palaveram is a small Military Cantonment, situated on the Great Southern Trunk Road, about three and a half miles distant from Saint Thomas' Mount, thirteen and a half miles from Madras, and twenty-two from Chingleput. It lies about four and a half miles in a direct line from the Coast, and was originally intended as a station for four native regiments, subsequently for two, and formed the head-quarters for Cadets. In consequence of the removal of the native regiments, most of the bungalows were pulled down by their proprietors. In 1846, the European Artillery Veteran Company was sent to garrison the place, and in 1852 the Native Infantry Depôt for regiments in Burmah was established here. Subsequently, two Companies of H. M.'s Regiment at Fort St. George were located here by turns for carrying on ball practice. It now forms, in addition, the head-quarters for the European Veterans.

The Cantonment has always been considered healthy. It is about 1½ miles in length and half a mile in breadth, with a range of hills on its southern side running east and west through the entire length of the Cantonment. The few Officers' bungalows which still exist are at the foot of the hills. There are four pucka-built barracks about 500 feet distant from each other, with a two-storied building in the centre as the Main Guard. The upper story is used as a place of worship now, the Chaplain from St. Thomas' Mount officiating every Sunday morning. The other public buildings are the Serjeants' Quarters, Regimental Store Rooms, Solitary Cells, Post Office, &c.; about half a mile from the barracks, on the western side, are the sepoys' lines, bazaars, and native

part of the town ; these are well built with open streets, and are kept clean and tidy.

There are three dwelling houses built on the hills, which are frequently occupied by people from Madras in search of health. Several Staff Officers and others prefer to reside here on account of the salubrity of the place and cheapness of house rent. There is a Roman Catholic Chapel here with a Chaplain attached.

Poonamallee.—The depôt formerly of H. M.'s troops, now amalgamated with those of the late East India Company ; is situated in 13° 2′ North Latitude, and 80° 8′ East Longitude, thirteen miles west-south-west of Madras, and about nine in a direct line from the Coast, and five from St. Thomas' Mount. The country is flat, but little above the level of the sea ; and the soil, except where rice is cultivated, is of a dry porous nature. There are numerous tanks scattered over the plains from which the lands under cultivation are irrigated ; from there being no marshes or accumulations of stagnant water or other sources of malaria, and from the openness of the country permitting the free circulation of the sea breeze, the station is very healthy.

The Cantonment is about half a mile square, and is traversed by the high road from Madras to Bangalore. At the western extremity are the barracks (capable of accommodating 500 men) with the Canteen, Coffee Room, and Library, the Officers' Mess-house, and a few private houses, generally occupied by the Military. About 400 yards eastward of these was the old Fort of Poonamallee, where the hospital, store-rooms, cells, &c., are located, the intervening space being taken up by a large grassy Esplanade which is occasionally used as an exercising ground by the troops ; on the east and south of the Fort, and about a stone's throw from where the ramparts once stood, are the dwellings of the European Pensioners, a few private houses, the Roman Catholic Chapel, and general bazaar; and to the south-east, about three quarters of a mile distant, is the native village, containing about 6,000 inhabitants, chiefly cultivators. The Protestant Church, Garrison School, and lines of the native troops are situated at the northern extremity of the Cantonment. The Station Staff Officer, Depôt Surgeon, Protestant and Roman Catholic Chaplains, and, occasionally, a few Military Officers doing duty at the Depôt, reside here.

The only other public building at this place is the Moonsiff's Court.

Poonamallee is five miles distant from the Railway Station of Avady, with a good road leading to it.

The villages of Trivatoor and Trivanoor in this taluq are considered places of great sanctity by Hindoos, and, consequently, several annual gatherings take place in them.

Ennúr, (Ennore).—A small village on the Coromandel Coast, is about ten miles from Madras, in 13° 13′ North Latitude, and 80° 23′ East Longitude. It is one of the salt manufacturing villages, and has a large back-water communicating with the sea, is connected with Madras by Lord Clive's Canal, and with the Pulicat Lake by Cochrane's Canal. There are several European bungalows here, and from its being on the Coast it is a favourite place of resort for the residents of Madras during the hot weather.

The *Red Hills* is also much resorted to by the inhabitants of Madras in consequence of the regatta that takes place annually on the lake, when the place is crowded with spectators. A large choultry was built here some years ago by Mahomed Goolam Sahib, brother-in-law to the Dewan of the Nabob of the Carnatic, at the cost of some 10,000 Rupees, and is now used as a public bungalow by travellers.

3. *Trivellore* gives its name to the taluq, and is a place of some note in consequence of its large temples and its monthly and annual feasts, for the celebration of which natives flock from many parts of the Presidency. It is situated on the railway line, the town itself being two miles distant from the station.

The village of *Tripassore* is about two miles distant from Trivellore and thirty from Madras, being situated in 13° 7′ North Latitude, and 79° 52′ East Longitude. The village itself is small, and its chief products are rice and dry grains. In 1820 it was converted into a station for Chelsea Out-pensioners, who preferred remaining in the country; their numbers fluctuate, and at present there are about 35. The old stone Fort has been pulled down, its area contained a barrack for the Pensioners which has also been nearly all demolished. Adjoining the Travellers' Bungalow is a large building fitted up as a school-room and place of worship for those of the Established Church. There is also a Chapel belonging to the London Mission Society, and a Roman Catholic Chapel out-

side the area of the Fort. Besides these, Tripassore contains a large heathen temple of some pretensions.

Nagalapoorum in this taluq is a large village renowned for its sun worship or *suria poojah*, and for its dancing girls. It is located at the foot of the Ramagherry Hills, and is about twenty miles distant from Trivellore. This and several other villages in the neighbourhood were amalgamated into the District from North Arcot in 1859. It is noted for the Ramagherry Hills where a waterfall is reported to exist, and the Caubaukum range of hills in this vicinity formed at one time a favourite resort to gentlemen who were in search of shikar. A native Sub-Magistrate presides here.

4. *Ponnary.*—This is rather a large and straggling village, and forms the Kusbah station; it gives name to the taluq. In it are Coromandel and Pulicat.

Coromandel (known as Kurroomunel) is situated on the banks of the canal and back-water in this District, where some half a dozen European bungalows are frequently occupied by the European and East Indian residents of Madras, either in search of health during the hot weather or on pleasure excursions.

Palanoykadoo (Valecata of the Dutch, and Pulicat of the English), is an old Dutch town, established in 1609, and situated in 13° 25′ North Latitude, and 80° 24′ East Longitude. It is built on the largest island on the southern extremity of the Pulicat Lake, which is formed by the back-water and extends over a tract of about 50 miles in length and eleven in breadth and communicates with the sea. It is connected with Madras by Cochrane's Canal. Many of the old Dutch buildings, the church and the graveyard, considerably filled with tombs, continue here in memory of the occupation of the place by the Dutch. A few East Indians, and a Missionary of the Additional Clergy Society, reside here, and I believe there still are in existence at this place one or more families who are descendants of the ancient Dutch.

Arnee, a small village in the Ponnary taluq, has long enjoyed a widespread reputation for the manufacture of the beautiful Arnee muslin. It is chiefly inhabited by weavers.

5. *Madranticum* gives name to the taluq from being the Kusbah station. It is a large straggling village situated on the Great Southern Trunk Road, about fifty miles from Madras and fifteen from Chingleput. It derives some im-

portance from the location of several wealthy Zemindars in the taluq. On the east it extends to the Coast, and in the villages of *Cheyoor* and *Chunampet* there are salt pans. On the south it forms the boundary of the District from lying on the verge of the South Arcot District.

Carangooly is also a large village located two miles north of Madranticum. Here there is a large garden and house built by the late Mr. Plaice, and now used as a Travellers' bungalow, and at the village of Allumparva is the dilapidated old Fort which formerly belonged to the Dutch.

6. *Conjeveram.—Kanchipurum,* vulgarly abridged into *Kanchi,* and corrupted by Europeans into Conjeveram, may be termed one of the strongholds of idolatry in Southern India.

1. Geographical position.

The name of this celebrated town (which also gives its name to the taluq), is derived from the Sanscrit word *Kanchin* or gold, and, owing to its wealth and importance in Hindoo mythology, this ancient town received the name of *Kanchipurum* or the Golden City. It is situated in North Latitude 12° 5', and East Longitude 79° 57'. It lies about 48 miles to the south-west of Madras; 22 miles east from Chingleput; 40 miles from Arcot on the west; and is 17 miles distant from the nearest Railway station of Arconum towards the north.

2. History.

Kanchipurum is a place of great antiquity, sanctity, and Brahminical tradition, and traces its origin to King *Veru Sana Chullraverraty,* who is said to have built the chief pagoda in the place. The famous temples of *Kanchipurum* are the source of its historical fame and importance. It is impossible to fix the precise date of the origin of this city, or when it became a sanctified resort for pilgrims, but temples are said to have existed here from the most remote periods, and dedicated to Siva and Vishnu.

3. Topography.

The District around the town is, for the most part, flat: although there are slight undulations, these are scarcely appreciable. Sparsely planted *topes* of Palmyra trees are scattered about, and most of the adjacent villages stand in *topes* of Tamarind and Mango trees.

The view is not generally picturesque, or the landscape pleasing to the eye, for, from the country being open and level, and from the extent of waste land in it, it appears barren and arid. These waste lands are, for the most part, slightly elevated above the surrounding country, and are left uncultivated from the absence of water. On these spots nothing thrives but the Palmyra, which may be said to luxuriate on them. In the distance, some hills are seen skirting the horizon.

There is nothing worthy of mention in the geological formation of the place. In many parts a stratum of gravel lies under the loose sand, and when this is broken up the soil is found to be extremely fertile.

4. Rivers.

Vide, under this head, the description of the Chingleput Taluq.

5. General description of the town.

Kanchipurum is a large, open, native town, situated in a valley, and built in a straggling manner over five miles of ground. It is chiefly divided into two portions, termed Vishnu Cunchi, and Siva Cunchi: these are again sub-divided into several parts each, such as *Hodson, Shaik, and Punjee* pettahs. There are also numerous villages on the outskirts of the town. Taking the Post Office as a centre, about 100 villages, all known under different names, exist within a radius of five miles from thence; all these strictly form the bulk of the town of *Kanchipurum* itself.

6. Roads and streets.

The main road is that from Chingleput to *Kanchipurum* and that from Conjeveram to join the Great Western Trunk Road, both of which are unmetalled. A good metalled road runs from Cunchi to Arconum. Besides these, there are a few others, chiefly village tracts, for carts.

In Conjeveram there are about 250 principal streets, some of which are very wide, being about 30 or 40 feet in breadth; but in consequence of the roads not being metalled, nor any attention paid to them, they have worn away to 2 or 3 feet below the level of the houses on either side, the result being that, during the rains, these streets form miniature rivers, the water flowing through and forming standing pools in many parts of them: and when this subsides, a bed of coarse sand, several inches deep, is left along the roads, at

all times extremely trying to draught cattle and pedestrians, and during the hot and dry months the scorching heat and glare of the sand, the stifling dust, and the yielding nature of the sand under foot, renders walking extremely fatiguing.

7. Dwelling houses.

The houses for the most part, and especially along the main street (which extends 2½ miles in length from east to west), are *pucka* built, and among these dwellings are numerous *chuttrums* or halting places for the travellers during the various festivals which are held here. The main street turns to the north and extends in that direction for about a mile, when it again dips a short distance to the west, and then finally turns to the north, leading straight up to the great pagoda of Siva.

A large proportion of the houses are built of chunam and stone, and are terraced, among which are a few two-storied buildings; but the majority are built of mud and bricks, and covered with tiles. The walls of a great number are painted with chunam, and on the outskirts of the town a few thatched houses are met with. From the previous remarks it will be observed that the majority of the houses are from 3 to 4 feet above the level of the adjoining streets. A few houses are met with having a European frontage only, and two or three are half native and half European.

8. Public buildings.

These consist of a Moonsiff's Court, Taluq Cutcherry, and Dispensary: the Post Office finds accommodation in a corner of the Moonsiff's Court-house. The Taluq Cutcherry is a two-storied building, and was formerly the Record Room and Travellers' Bungalow, but now forms the Taluq Cutcherry and chief Police station.

9. Hindoo temples.

The most conspicuous of the public buildings are the two large temples, one at either end of the town. That at the entrance of the town on the east is surrounded by very high and massive walls built of granite slabs, and covers a considerable area. On the east and west are two tall *Gopurras* by which the temple is entered, the base of which is also built of granite but the body and apex of chunam stone, and said to have cost a fabulous sum. This temple is dedicated to *Vishnu*, and is very rich in jewels, &c. Within the enclosure formed by the

walls, are a great number of buildings consisting of *choultries*, *mundebums*, *vimanas*, &c., all built of granite, richly carved, the roofs supported by monolithic pillars, covered with sculptured representations of deities, mythological events, and griffins. All these places appear to have been built without any reference to each other. The *Dhurmacurthas* (or Church-wardens) of this, as well as of the other principal pagoda (Siva's), are extremely polite and obliging, and readily exhibit their treasures to Europeans. In one large pillared hall are shewn the figures of horses, elephants, and various fabulous animals, made of wood and painted. On these the idol is carried about in religious processions. The Church-wardens take great pride in shewing the jewellery, and especially point out those articles presented by Europeans in former days. Lord Clive, Sir T. Munro, and Mr. Plaice and others, are mentioned with much stress as donors of jewels to this temple. The principal article consists of a golden palanquin,—the frame is made of wood laid over with thin plates of embossed gold,—said to be the gift of a begging Brahmin and valued at Rupees 25,000. The necklaces, armlets, earrings, &c., which form the greater portion, are of precious stones of various kinds in their rough state, and rudely set in gold. Europeans are not admitted to see the idol. On one side of this pagoda is a large fruit garden belonging to it.

The temple of *Siva* is much like the one already described, but is not so rich. From the top of the only *Gopurra*, which is ascended by flights of very steep stairs, a fine bird's-eye view of the surrounding country is obtained, and on the walls (of the uppermost story) are written the names of those Europeans who have at different times made the ascent, and some of these inscriptions bear a very ancient date. At this temple, a huge silver bull, with a golden saddle, is shewn, and on this the god *Siva* rides when he goes in procession through the town. Besides this, there are several large wooden griffins, palkees, &c., gaudily painted, on which Siva makes his peregrinations in the town on various festive occasions.

10. Mahomedan durgahs.

In addition to the Hindoo temples, there is a Mahomedan durgah of Shah Ahmed Howbeah, which has, I believe, been endowed with an annuity of Rupees 1,000 by Government. This is a large mosque-like building, built of brick and chunam, and

gives cover to the tomb of Shah Amed, who is called a saint. The place is well kept, with a neat garden on either side, and a sand-covered path leading to the building in the interior, which is some distance from the porch or gateway.

11. Charitable Institutions.

Patcheappah's Charity.—This consists of a large well-built *chuttrum*, where grain is daily distributed to about 24 religious mendicants, and on festive occasions to an unlimited number.

Conniah Chetty's Charity.—This consists of a *chuttrum* also, where 12 Brahmins are served twice a day with cooked food throughout the year.

Tanjore Rungiah Naidoo's Charity consists in feeding 12 Brahmins in a *chuttrum* with cooked food twice a day; but owing to a dispute, this has been in abeyance during the last year.

There are, besides these, three *Choultries* on the outskirts of the town, established by Chettiar Padah, where ¼ measure of beaten rice and the same quantity of rice floor is served out daily to all religious mendicants who come from the north.

Lallah's Choultry.—Here rice, dholl, and condiments are daily served out to travelling mendicants.

These Charities are one of the causes which attract so many religious mendicants from all parts of India. They frequently arrive in the most wretched condition brought on by want and fatigue, and a majority leave their bones here in memento of their pilgrimage.

12. Religion and Feasts.

The religion is strictly Hindoo, and comprises the followers of Vishnu and Siva; they are sub-divided into different sects. There is a good deal of ill-feeling between these rival sects, more especially between the Thengalays and Vuddagullays, who worship Vishnu. Both these sects are very powerful, and there is a constant strife between them for precedence in the various feasts and ceremonies, especially that which takes place in May. At this time, fears are always entertained that the peace will be broken, and to prevent such an occurrence a large body of Police is always present.

It is impossible to describe the immense concourse of people which assembles at this place on the occasion of the

great festival ; the place is literally crowded with human beings, whose numbers exceed 200,000. Every house, verandah, *tope*, or other place of shelter, is occupied. The streets are lined with temporary booths and *boutiques*, where flowers, sweetmeats, native scents, ornaments, beads, brass utensils, &c., are paraded for sale.

In addition to this, there are minor festivals constantly going on throughout the year. Pilgrims, devotees, and feast-goers are attracted here from all parts of India, and a large body of mendicants and rogues of all kinds flock here to make what they can.

13. Educational Institutions and schools.

Besides those already mentioned in the general description of the Chingleput District (which see), Cunniah Chetty has provided for the education of twelve, and Tanjore Rungiah Naidoo for that of twenty-four Brahmin boys in Sanscrit, in connection with the different charities which bear their names. There are also several small vernacular private schools met with in various parts of the town.

14. Tanks, water reservoirs and wells.

There are but two large tanks, and these are generally dry from four to six months of the year, and are situated on the outskirts of the town. They are recognized by the names of *Conayree Coopum*, and *Nuthayputtay Ayree*.

There are about twenty stone-built reservoirs or Brahmin tanks within the town of Conjeveram, and some of fair dimensions situated in different parts of the town, a few being within the enclosure of the various temples. These, for the most part, contain abundance of water; but from the filthy system in existence in every native town—the majority of the inhabitants not only performing their daily ablutions, but also washing their dirty cloths here—the water abounds with animal and vegetable organic remains : thus the water drunk by the greater portion of the inhabitants, who are unwilling to go a little distance and procure better, is very impure. The town contains numerous wells, but in all places the water lies deep, between 30 and 40 feet below the surface. The water from most of these wells is brackish, and unfit to drink.

15. Inhabitants.

The population of this town, as given in the Official Quinquennial Census taken in 1861-62, is 28,620 : this, I think, includes only what is called the town of Conjeveram itself, independently of the hundred villages which

skirt it; but the officials themselves do not consider this census even approximatively correct. Well-informed natives of the place consider that the population exceeds 60,000.

The whole population, divided into castes or professions, will stand as follows:—

Brahmins	$\frac{1}{4}$
Weavers	$\frac{1}{4}$
Pot-makers	$\frac{1}{16}$
Canarese	$\frac{1}{16}$
Silk-weavers	$\frac{1}{16}$
Bulgeevaudloo Conthala and Pullee	$\frac{1}{16}$
Merchants, Chetties, Moodelliars, Mahomedans, Comooties	$\frac{1}{4}$

16. Trade.

The chief trade is that of the weavers, who manufacture cotton goods very largely, and there are a few silk weavers. A large quantity of castor, lamp, gingelly, and ground-nut oils are expressed here by native mills. All other products are imported from the surrounding villages, or brought in from a distance.

17. Weavers' distress.

A small portion of those who follow the trade of weaving, are Mahomedans, so that these, with the Brahmins, form the bulk of the population. Owing to the American war and the dearness of twist, these people have suffered from the failure of their trade; but the destitution thus caused has been greatly exaggerated. As yet, it has only affected the paupers among the weavers, and the majority of these have already disposed of their looms and turned their attention to other occupations. As soon as it became known that these people were likely to suffer from want, such arrangements as were necessary were made, to the extent of the funds at the disposal of the Committee of Management, to meet such contingencies. The Madras Chamber of Commerce have since placed at my disposal Rupees 10,000, out of Rupees 80,000 munificently subscribed for the purpose by some Parsee gentlemen of Bombay for the use of the distressed weavers. Applications for labor have come in from all parts of the country. Those who are willing to proceed to other countries will have their expenses paid them,

and on reaching their destination will receive 4 annas per man, and annas 2 and pies 8 per woman a day. These are liberal terms for manual laborers, but the weavers have entirely set their faces against manual labor (other than their own trade), as also against emigration, and even object to go from here to Madras; and as yet, I have only succeeded in getting some half a dozen of them to take to manual labor. What the weavers ask for is money-advances to carry on their trade, and singularly enough they admit that their trade is on the wane and not likely to revive again even if twist becomes cheaper. They are already deep in the books of the Soucars and cloth merchants, and, as a class, they are addicted to drinking and dissipation. Under these circumstances, I could not undertake to make them money advances, but am willing to find them employment as gardeners and laborers, and to teach them rope and mat-making, and the extracting of various fibres, all of which will, I am convinced, find them lucrative employment, and I have further offered to pay them at the market rate for their labor, but they have not as yet come forward.

18. Dispensary.

This building is situated at the western end of the town, on the *bund* of a large, square, stone-built tank, and was originally a Government Travellers' bungalow; but some years ago it was sold and passed into private hands, from whom the Committee of Management of the Dispensary purchased it outright. The Honorable R. S. Ellis, Collector of the District, performed the ceremony of opening it in the presence of most of the respectable inhabitants of the town who had assembled for the occasion.

The building runs north and south, and the entrance on the south is protected by a verandah. This leads into the reception room with surgery and store-rooms on either side. At the back of these are two wards, one behind the other, and surrounded by a verandah. Since the purchase of the building by the Committee, an upper room 18 × 12 has been covered in, the out-houses thrown down, and two rooms 12 × 12 protected by a verandah, as also a cook-room and dead-house at the back, have been built. In front, a thatched building has been erected and divided into two apartments one intended as a Cholera ward, and the other as a spare ward for any special purpose: these are 12 × 12.

This building is in every way adapted for a Dispensary, excepting that it is not in a central situation, but lies on the

western outskirts of the town. Another piece of ground in a more central position, consisting of three-fourths of a *cawnie* has been granted by Government, on which it is intended to build a dispensary.

9. Donations of land.

Thirty-eight *cawnies* of wet and dry land have been made over by deeds of gift duly executed by the inhabitants of the district. These have all been farmed out, and Rupees 33-12-0 will accrue to the Dispensary from this source ; but as these lands were given for the benefit of a purely charitable Institution, it is intended to apply to Government shortly with the view that the *Teervah* (tax) may be done away with, which will go towards the Dispensary : thus the item of income from this source will be increased from Rupees 33-12-0 to Rupees 147-2-7. At the same time, Government will be solicited to remit the tax on the invested funds.

Thus, without any assistance from the Government, the inhabitants have Rupees 2,000 invested in the 5½ per cent. Government loan, a floating capital in the hands of the Agents, 38 *cawnies* of land, a building of their own for the purposes of a Dispensary, and an average monthly subscription of Rupees 25.

20. Sanitation.

Conjeveram being a purely native town, no efforts are ever made either to drain the town, preserve it in a state of cleanliness, provide it with proper roads, or to prevent its water-supply from pollution. Consequently, the village pigs are the only scavengers, and had it not been for these animals it is impossible to say what the results might have been : as it is, they are not sufficiently numerous to devour all the human excreta and other filth that is spread over the length and breadth of the town. On festive occasions, not only the outskirts but every corner about the place is covered with human excreta, and should it happen to rain, which it frequently does during the most important annual festival in the month of May, the town is washed out, and the solution of night-soil lying about the streets and carried about from place to place, creates a most offensive and disgusting smell. There are no latrines or other places of convenience for the public, and, frequently, the putrifying remains of mendicants and pilgrims lie about the outskirts till devoured by dogs or pigs.

The water-tanks are polluted to a frightful extent on these occasions, and they swarm with human beings, men, women, and children, almost nude, who bathe their persons and wash their cloths side by side, and so densely crowded are the margins of the tanks that there is a struggle for room. The water, on examination at this time, is found loaded with organic remains. The Police do all that they can, and to some extent succeed, in having the chief thoroughfares superficially cleaned, and this is as much as they can do without a scavenging establishment. On festive occasions the roads are drenched with water to lay the dust and cool the burning sand that scorches the feet of pedestrians, from which cause every hollow forms a standing pool where filth of every description, in addition to the remains of fruits and vegetables, are thrown, and, accumulating, form a most disgusting cess-pool, from which a most offensive smell issues, poisoning the atmosphere around; dozens of these putrifying pools lie unheeded in the very centre of the principal thoroughfares. Nothing can be done to remedy this state of things until a Municipal Association is organized in the town.

21. Soil.

The soil in and about Conjeveram is sandy, changing here and there into a sandy loam, which seems rich in minerals useful for the successful development of vegetables and plants; but in some parts isolated patches of clay beds are met with.

There is a great sameness of soil throughout, and its being open and porous the water is readily absorbed and the surface left becomes brittle and sandy; water is at all times scarce for agricultural purposes.

22. Productions.

Notwithstanding the scarcity of water, the natives manage to cultivate vegetables. All the native vegetables are cultivated in and about the place, and large supplies are brought in from the surrounding country. Cocoanut and tamarind trees are met with everywhere in large numbers, and mangoes, jack, plantain, orange, lime, pumplemose, &c., grow in all the fruit gardens, and are said to yield well. Some patches of dry and wet cultivation are carried on in and about the town; the latter are irrigated from river channels. The palmyra grows in abundance on the outskirts.

The village of *Wallajahbad* is also situated in this taluq, and is skirted by the Palar river. It was formerly a Military Cantonment, but has been abolished as such since the year 1850. All the public buildings have been thrown down, and the materials sold by auction. The only European bungalows now remaining are, one in the possession of the Free Church of Scotland's Mission, and another, the property of the late Colonel DeSalis, which continues vacant. The grave-yard is well filled with tombs, and the names of some officers of note interred there afford the only evidence of the place having once been a Military station. The village is about three-quarters of a mile in length and half a mile in breadth, consisting principally of a single street. It runs from east to west, and is situated in North Latitude 12° 58′ and East Longitude 79° 39′ being 35 miles west of Madras, 14 miles distant from Chingleput, and about 28 miles in a direct line from the coast. The country around is flat and low.

About ten miles north of Conjeveram, and the same distance from Streepermadoor, is the village of *Polilloor*, where, in the midst of a large garden, are to be seen the tombs of Colonels Hyde and Floyd, and others who fell in the struggle between Hyder Ali and Colonel Baillie first, and subsequently between General Coote and Hyder Ali in 1780. At *Balchetty's Choultry*, tombs of other British Officers who fell in these stirring times are met with.

At *Keelacherry* and *Cheveylamodoo*, villages in this District, exist large gardens, laid out in the former by Mr. Plaice, and in the latter by Colonel Floyd,* and now the property of natives of the District, but still recognized by the names of the gentlemen who originally established them; near Perumbaukum, on the old Bangalore road, is a large plantation containing trees of various kinds originally planted by Mr. Plaice, a former Collector of the Jaghire. It still goes by the name of "*Plaice Thothum*" and now belongs to Dr. Fennelly, Roman Catholic Bishop of Madras, who has a farm there.

The village of *Streepermadoor*, which is situated on the Great Western Trunk Road, possesses a large bungalow formerly used by travellers, but it has lately been made over

* A copy of the original correspondence between Colonel Floyd, the Collector of the District, and the then Governor of the Presidency, who conferred the grant of this land on Colonel Floyd, may be seen in the possession of the present owners of the garden, descendants of the Colonel's butler.

to the Department Public Works. Here also is to be seen a large *chuttrum* built of brick and chunam by Vencatarunga Pillai, for the use of native travellers with a Brahmin attendant, who is paid and the building kept in repair from funds endowed for the purpose. This building is now under the charge of the Collector of the District.

It also contains a large temple dedicated to Vishnu, in honor of whom a grand festival takes place here in the month of April. Since the opening of the South Western Railway, the Great Western Trunk road has been forsaken by travellers generally.

7. *Chingleput* (Singhalapetta), the head quarters of the District and the Kusbah station of the taluq, is a small village situated in 12°46′ North Latitude, and 80° East Longitude, being 35 miles south-west of Madras. It derives its importance from the Civil and Sessions Court being held here, and from being the residence of the Judge and other European Officers. It contains a population of 4,406 inhabitants.

By taking a bird's eye view with the Fort as a starting point, the topography of Chingleput appears as follows :—It is surrounded on the east, south, and south-west by hills, through which a valley about three miles in length runs due north. The town of Chingleput lies on its western side. On the east and partly on the north, the Fort is surrounded by a large artificial tank, on the western side by an open tract of land now under cultivation, and on the southern side is situated the town of Chingleput at the foot of a small range of hills running from north to south. The town is advantageously situated for mercantile as well as political purposes. It is about three quarters of a mile in length, and a quarter of a mile in breadth, running north and south. At the entrance of the town on its northern side, two roads diverge from the Great Southern Trunk Road, one to the east and the other to the west, the one passing through the eastern part of the town, the other on the western side, both converging meet the Great Southern Trunk Road, which runs through the centre of the town, a little beyond the Civil and Session Judge's house. On the western side of the Fort and about half a mile distant from it is the adjoining village of *Nuttum*.

The Judge's bungalow and the other five European houses are situated in an irregular valley about a mile south of the

Fort. The locality is surrounded by numerous hills which vary in height from one to five hundred feet and are for the most part covered with low jungle. The valley is more open on the east, the hills being at some distance, and the intermediate space being covered with low jungle towards the east and south-east.

On the north lies the lake before-mentioned, the water of which is retained by a *bund* nearly a mile in length, the top of which formed the high-road formerly. Since the year 1858 a new line of road in connexion with the Great Southern Trunk Road has been made through the rice-fields, but the road on the *bund* is still used as a cart track. This lake affords an abundant supply of water for the cultivation of paddy, &c., in consequence of which a succession of crops is frequently raised in its immediate vicinity, forming one of the staple products of the District.

The public buildings outside the Fort are the Dispensary, Public Bungalow, Roman Catholic Chapel, the Post Office, and the Sub-Collector's Cutcherry which is a rented building.

The *Civil Dispensary* was established in 1850 and continues to work satisfactorily. The accompanying table shews the relief afforded by this Institution during the last ten years.

Average of the In and Out-patients of the Civil Dispensary at Chingleput.

Year.	In-patients.	Out-patients.
1854	18	71
1855	12⅓	69½
1856	14¼	69
1857	10⅓	65¼
1858	14	64¾
1859	16	61¾
1860	13⅙	61¼
1861	12½	59½
1862	11¼	59¼
1863	10¼	61¾
Total......	132½	643

Efforts continue to be made to render this Institution self-supporting, with a promise of success.

The *Public Bungalow* is in two divisions, each containing a sitting and small dressing-room and bath-room, the whole surrounded by a verandah enclosed in a compound with out-offices. It is partially furnished with furniture, crockery, &c. A butler, waterman, and scavenger are attached for the convenience of travellers. By the recent orders of Government, a fee of eight annas for six, and a rupee for twenty-four, hours' stay is demanded from travellers for a room occupied by one or more persons, to cover the expenses of attendants, &c. The bungalow is close to the western side of the town, and is conveniently situated for procuring supplies, &c. The ground on the eastern and northern sides is open, and is generally used as a cart-stand by carts passing through the town and remaining a day. On the northern side of the bungalow and some little distance from it, is the Roman Catholic chapel. This locality has undergone considerable improvement, the ground around having been taken up and a monastery and other religious buildings are in course of erection; a garden or *tope* is in course of formation on the west. The high road to Wallajahbad passes close to the building, but is only metalled within the precincts of the town, beyond which it is unmetalled and sandy.

The *Post Office* is situated on the Great Southern Trunk Road nearly opposite the way leading to the Fort, it is a small one-roomed building with a verandah in front.

The *Fort* is situated about 34¾ miles from Madras, and 1 mile from the European portion of the town. It is tolerably large and is reputed to have been one of the strongest in India. It was taken by the French in 1751 but it was re-taken by Captain, afterwards Lord, Clive, in 1752, after a short siege. It is surrounded by ramparts and a wet ditch about two miles in circumference, with an inner rampart and wet ditch dividing it into two portions, an outer, and an inner Fort, the latter comprising an area of 400 yards from north to south, and about 270 yards from east to west. Of late years the Fort has been pulled down, the inner wing of ramparts facing the boundary of the inner Fort has been demolished, the inner ditch filled up, and the eastern part of the ramparts is now in course of demolition, as well as the outer wall of the southern ramparts adjoining the Jail cells

which is now re-placed at a distance of fifty feet by a granite wall from the *debris* of the old Fort.

The public buildings within the Fort comprise besides the *Jail* and its *Hospital*, the *Court Houses*, *Tuhsildar's Cutcherry*, the old *Veteran Barracks* now in the occupation of the Inspector and European Head Constable of the Mofussil Police, houses of the Jailor and Superintendent of looms, the *Rhai Mahals* and a large bungalow with garden attached the private property of a native.

The *Rhai Mahal* is an old three-storied building, strongly built of brick and chunam, situated within the inner wall of the Fort. The lower story is converted into a store room, the second contains Civil debtors, and the upper division is used for female prisoners and juvenile offenders, &c.

The *Jail*, which was established in 1802, is well adapted for the purposes for which it is employed, being secure, capacious, and well ventilated. It is situated on the southern side to the right of the entrance between the inner and outer walls of the Fort, close under the outer ramparts, and extending to the counter-scarp of the inner ditch, "a situation very ill-chosen for health, but less objectionable since the demolition of the ramparts." The wards or night cells form two enclosures, a quadrangle and a parallelogram, the former contains seven and the latter five rooms, and a solitary cell. These several wards or rooms vary in size from 39 by 15 feet to 15 by 9 feet, and the whole is encircled by an inner and an outer verandah. According to the regulated area directed by Government of 500 cubic feet of air to each man it is capable of accommodating 165 prisoners, but since the operation of the Indian Penal Code, the area allowed falls below that given above in consequence of the increased number of prisoners. The building is built of brick and chunam, the cross pieces and rafters are of trussed teak-wood, the roof is tent shaped and covered with tiles. There are a few round holes or apertures in the walls, and two square openings in the roof of each cell; the other means of ventilation being by means of iron railed doors, the rails are about an inch and a half in diameter and three inches apart. All the windows, doors, and ventilators are open throughout the day, the doors are locked at 6 P. M., when the prisoners are shut in, and opened at 6 A. M. daily. The wards are kept extremely clean and dry, being frequently whitewashed; and

the floor, which is tiled, plastered with lime-wash once a week.

The following is the scale of diet allowed to each prisoner.

Unboiled rice in weight..........	65	Rupees.
Salt....................................	3	„
Tamarind..........................	1¾	„

with a sufficient quantity of curry-stuff and five Rupees weight of *dholl* every other day; during the season, fresh country vegetables are served out. The food is prepared by the prisoners, about 160 form messes and the others mostly cook for themselves. A good number of the prisoners sometimes come from the District of Cuddapah and Chittoor, these as well as some of the low-castes such as Karavas, &c. are accustomed to rice boiled with raggy, cholum, and cumboo, in the form of porridge or cakes, while all the others are accustomed to curry and rice, the former generally made of vegetables, once a week with mutton.

Clothing.—Each prisoner is allowed annually two pieces of cloth 9 feet 5 inches long and 3 feet wide with two *lungoties*, each 3 feet long, and 1 foot wide, and two cumblies, each measuring 8 feet 3 inches in length, and 3 feet 5 inches in breadth. No bedding is allowed in the cells. The cost of clothing per head per annum is Rupees 3-7-4. Women are allowed two cloths each, with one large cumbly, the cloths measure 15 feet in length, and 3 feet in breadth, and cost Rupees 4-4-6.

Work.—The prisoners are chiefly employed in road-making. They work on the Great Southern Trunk Road within a distance of five miles, as well as on those about the town, and some are employed in the Jail garden growing hay. About fifty are employed in weaving cloths, &c., and a few of the more aged and weakly sweep the Jail and its vicinity clean. The prisoners work out daily from 8 A. M., to 4 P. M., with an intermediate hour of rest at noon (1 P. M.) during the hot weather.

Hospital.—The hospital is bounded on its western face by a wing of the inner ramparts, and on the eastern and southern sides at a distance of 12 feet from the building by a strong brick and chunam wall about 8 feet high. The prisoners' cooking shed lies between the hospital and Jail cells in what was the inner Fort, forming a double quadrangle adjoining the hospital wall to the north, and connecting it with the inner ramparts, the greater part of which had been pulled down

to the south and west. The double square is 103 feet broad and 184 feet long. A continued line of low sheds runs along the western and northern sides of the outer square, and on four sides of the inner; each shed being about 10 feet high and 8 feet broad. There are two wells in the inner square. The *Rhai Mahal* is situated in the northern angle with a third well in the outer square, and the wells contain an abundance of water for six months in the year, after which the supply frequently fails. The squares formed by the cooking-sheds are well planted with Banyan and Portia trees, and the prisoners are permitted on Sunday to take air and exercise here, to perform their ablutions and carry on a social chat under the trees. On the west of the *Rhai Mahal* and next to the hospital building, but situated within the area of the cooking-sheds, is a small dwelling house opening towards the north, the residence of the 1st Dresser.

The hospital is detached from the Jail. The length of the building is 122 feet. It is divided into three wards of irregular lengths and which do not communicate with each other. The largest ward measures 39½ feet in length, 15 in breadth, height of wall is 12 feet, and ridge of pent 5 feet. A surgery 15 feet square exists at the northern end. A verandah runs on both sides of the building; either side of the verandah is enclosed at the northern end and converted into a waiting and store room, 7½ feet wide and 15 feet long, the verandah itself being 9 feet wide.

The hospital has ridge ventilators in the roof, the walls are built of brick and chunam, and the roof pent with cross pieces and rafters formed of palmyra wood. In the same enclosure and at the back of the hospital are a dead house, lumber room, and cooking place. The privy is an open place surrounded by a wall 3 feet high. The wards of the hospital will afford accommodation to about 60 patients; there are five windows and a door to each ward, each window 4½ by 3 feet and secured by iron bars and wooden shutters, which can be left open at night during the hot-weather. The doors measure 8 by 4½ feet and are opened at 6 A.M., and closed at 6 P.M., daily.

The diet of the sick in hospital is left to the discretion of the medical officer who is at liberty to order bread, milk, rice, &c., as may be found necessary, the expense being defrayed by a contingent bill submitted for the sanction of the Inspector General of Prisons. The medical officer visits

the hospital daily, and once a week examines the prisoners, visits the jail cells, cooking places, &c., and reports, if necessary, to the judge on the state and cleanliness of the buildings.

All prisoners admitted into the jail or on trial, are immediately submitted to the medical officer or his subordinate for examination, to see that they are not suffering from contagious or other complaints, and if found diseased, they are at once admitted into hospital. All prisoners are vaccinated on admission without reference to previous marks of vaccination or small-pox.

Health of the Jail.—This jail, which has hitherto been considered one of the healthiest, has, during the last two and a half years, become sickly. The mortality last year (1863-64), was 8½ per cent. of strength, and judging from present appearances, there is every reason to suppose that this rate of mortality is not only likely to continue, but increase. This has been brought about by over-crowding and partly by the system in vogue of growing hay. The over-crowding has been greatly remedied, but the growth of hay continues. The legitimate use of the jail garden in growing fresh vegetables for the use of the prisoners has been abandoned for that of hay cultivated in their stead. The system of cultivation is extremely obnoxious; not only does the hay from its succulency and tendency to retain moisture as well as to afford shelter to a host of ephemeral animal life prove a source of malaria, but the more pernicious system of bringing the reeking silt deposits from the beds of tanks and spreading it out over the hay fields to the depth of from one to two inches over a large surface is carried out, and thus increases the sources of malaria. In the absense of silt the offal and town sweepings are substituted, and to promote decomposition, irrigated. The result being that so much animal and vegetable matter as abound in this top dressing, when saturated with moisture and exposed to a tropical sun, must and does give out much marsh miasmata in the immediate vicinity of the jail, which prejudicially affects the health of the inmates. With the introduction of the growth of hay, *Beriberi*, a disease hitherto unknown either in the station, or district, has made its appearance in the jail, and as the hay cultivation extends, so does the sickness and mortality keep pace. The growth of hay is forced to such an extent, that every nook and cor-

ner is taken up with it, and even the Fort ditch or trench, —which hitherto remained waste and the marsh caused in it during the wet weather neutralized by the growth of numbers of aquatic plants that counteracted the noxious effects of the marsh and purified the surrounding air—has been planted with hay, which is now under two feet of water. The decomposition of so much vegetable matter must give rise to much marsh miasm and prove a further prolific source of disease, if not at present, at least during the next hot season when the marsh becomes dry.

Whatever advantages the growth of hay may possess in a financial point of view, it is not possible that a paternal Government would sanction its continuance at the cost of health and life of the prisoners incarcerated in the immediate vicinity.

Jail Sanitation.—The sanitary state of the jail calls for immediate attention. The drainage is out of order; the filthy system of placing large open-mouthed earthen vessels for collecting urine and allowing it to remain in the vicinity of the cells putrifying from 14 to 16 hours, and the pouring out of this putrifying fluid from vessel to vessel in the same vicinity, continues in existence. The burial of the night-soil of a large body of prisoners carelessly in the neighbourhood of the Jail garden, the allowing of cattle to trespass in the Jail cell verandah and soiling the place with their droppings, one and all call for immediate remedy. I do believe that if attention be given these subjects, it is possible to reduce the sickness and mortality going on in the Jail at present.

Table shewing strength to deaths during the last seven years.

Years.	Strength.	No. of deaths.	REMARKS.
1857-58	285	2	One of the seven died out of hospital without receiving treatment.
1858-59	300	7	
1859-60	292½	13	
1860-61	294¾	17	Two of the ten died out of hospital without treatment.
1861-62	347	10	
1862-63	414¾	34	Four of the 34 died out of hospital without treatment.
1863-64	341½	29	

The Chingleput taluq extends to the eastern Coast. *Sadras*, the capital of the late Dutch East India Company, is about nineteen miles distant from Chingleput, and contains several European dwelling-houses still in existence, and, in a more or less dilapidated state. The Dutch Governor's house, is now converted into a traveller's bungalow. Here a small Chapel and school belonging to the Liepzig Evangelical Lutheren Mission exist as also a Chapel belonging to the Goanese Catholics. The southern coast Canal skirts the town and extends some six miles beyond it to join the Palar river, and there is a constant intercourse with Madras by means of boats; three rupees is the fare for a trip to or from Madras to Sadras.

Mahaballipoorum recognized by the English as the Seven Pagodas lies on the coast and is about 30 miles distant from Chingleput and ten miles north of Sadras. It is a small village. A temple dedicated to Vishnu, stands on the Beach, and is washed by the spray; there are some other ruins visible, enshrouded by the waves, with several rocky knolls projecting through the surf; about half a mile inland are to be seen several small rocks surmounted with irregular boulders; in this vicinity it is said the Capital of the ancient Pandian Kings once existed. Many of the rock-carved temples have porticoes with various representations of Hindoo deities, animals and emblematical devices wrought in bas relief; several of the temples have each been chiselled out of a solid piece of stone, whilst the carvings, especially those of the animals, are executed with much spirit and some beauty. This is an attractive spot for Europeans interested in Hindoo mythology, who go to see these famous sculptures as they are termed; unfortunately there are no bungalows or place for staying, which renders the trip anything but agreeable unless tents are taken out by the visitors. The canal runs about a mile and a half from the place itself and about two miles from the Beach.

Covelong.—This place is further north of Mahaballipoorum, and is about 35 miles distant from Chingleput. Here there is a large Roman Catholic Chapel and other buildings connected with it, where an annual feast draws a great number of Native Christians from Madras. Here also a fine old bungalow (private property) on the Beach is met with, having a fine commanding view of the sea with the Beach water in the rear. This place is furnished partially and rented at two rupees the day; many gentlemen with their families

from Madras run out here either in search of pleasure or health. There are also salt-pans here and a small English school in connexion with the Catholic Chapel.

Triporoor is a large village and a place of some pretensions from being the head quarters of the Siva· sect, and a large pagoda or temple exists here, to which the devotees of the deity Siva flock on each new moon day. In the vicinity is a large hill crested with another of Siva's temples.

Terookycoondum is a large village in the Chingleput taluq, about eight miles distant from it on the high road to Sadras. This is a place of some pretensions, the village having a large temple in it and another surmounting a rugged rock about 500 feet high with granite steps leading to its summit, where a couple of vultures are daily fed by the presiding priest at mid-day; the generality of the natives are deceived into the belief that these birds come all the way from Benares daily to receive their food, but they are merely the common vultures, (Neophron pernopterus) that hover about the place.

Salubrity of Chingleput.—A residence of six years, as well as the previous history gleaned from the records of the hospital, enable me to state that sickness does not prevail to any usual extent in the town or district. My own observations lead me to infer that it is a healthy place, although, during the hot season, and more particularly the months of July, August, and September, just before the commencement of the north-east monsoon, the drying up of the large tanks leaves exposed to the action of the sun, quantities of decaying fresh water algæ which gives rise to mephitic exhalations. At certain times, more particularly after slight showers of rain, and when the wind blows from the north-east or west, a nasty disagreeable odour is perceptible from some distance, but although the smell is disagreeable I am not aware of its having proved prejudicial to the health of the inhabitants.

In fair weather the tank (adjoining the Fort) is six feet deep under the Fort walls; the inner ditch which measures 288 feet in length and 133 in breadth has been filled up to a great extent by the debris from the demolition of the inner ramparts on the southern side.

The general *area* of the district is 21,717 square miles. Of this, 499,075 acres are waste land.

Justice.—In addition to the Civil and Sessions Court at this place, there are four District Moonsiffs for dispensing justice to the inhabitants at the following places in the District—*Poonamallee*, *Carangooly*, *Conjeveram*, and the additional Station Moonsiff at *Chingleput*. The Magistrate of the District holds his Court at Sydapet, and the Joint Magistrate at Chingleput, the Assistants and Tahsildars in their various Kusbah stations.

Police.—The present Mofussil Police was organized in 1859. The strength at present comprises—

Superintendent...	1
Inspectors	17
Constables...	...700

the number of the last class has been lately augmented I believe.

This institution is now fullyestablished in the District, and the opposition it met with on its first introduction has now disappeared, and the Police, as a body, are giving satisfaction and discharging their duties creditably in the protection of life and property and suppression of crime. My duties as Local Superintendent of Vaccination have afforded me the opportunity of watching their operations in the most remote parts of the District when beyond the ken of their immediate superiors, and I am happy to state that in every station or out-post, and in their daily beats, wherever met with, the Police were invariably on the alert, and discharging their several duties satisfactorily, so far as I could judge as a spectator, and from what the residents of the different villages had to say on the subject, they undoubtedly possessed the confidence of the people of the District.

Rivers.—A branch of the *Palar* river runs about one mile west of Chingleput and is again crossed on the Great Southern Trunk Road about 3½ miles from the town. The bed of the river presents to view a vast sandy plain about a mile in breadth and having three small artificial streams which seldom run dry and are used for the purposes of irrigation. The bed of the river is dry for a great part of the year, but during the monsoons the river swells to an enormous extent from the freshes bringing down large quantities of water, and on these occasions the force and rapidity of the current is so great that it is impossible to ford it, and common country boats are had recourse to in order to cross it.

This river takes its rise in the neighbourhood of the *Pennar* in the Mysore Province among the hills of Nundidroog, and branching from the *Palar* which runs between Arcot and Vellore, enters the District about twenty miles east of Arcot, and, passing along the western skirts of the vicinity of Conjeveram under the name of the *Wegamutty*, passes on by Wallajabad, Chingleput, and Carangooly, and eventually empties itself into the Bay of Bengal between the villages of Sadras and Vapingary after a winding course of 220 miles.

Cheear.—This river is a small branch that traverses the District, from the south and joins the Palar in the vicinity of Conjeveram. It originates in the Chingamali Hills in the neighbourhood of Salem and North Arcot.

The *Cortialar* river takes its rise from the tank of Cavarypauck, about forty miles from Chingleput in the Chittoor District and passing along the Ponari taluq, empties itself into the backwater at Ennur, forty-six miles north of Chingleput.

The *Narnaveram* river rises in the Naggery Hills, passes along the village of Ponari and empties itself at Pulicat with the previously named river.

Cooum river originates in a village of the same name in the Trevullur taluq and empties itself into the sea at Fort Saint George.

The *Sydapet* river takes its origin from the District, skirts the town of that name, and lower down assuming the name of *Adyar* empties itself into the sea a little beyond St. Thomé, and the locality is now recognized by the name of Adyar from the termination of the river.

Tanks.—The large tank that washes the walls of the Fort of Chingleput, when full, extends over an area of from five to seven miles, but it seldom fills completely. During a residence of six years I have only seen it once full to overflowing; on another occasion I saw it three parts full, but it generally contains sufficient water to irrigate the rice-fields that lie below it on the north-west. There are several other tanks equally large, as those of *Chembrumbaukum, Madranticum, Outramaloor, Red Hills, Thennary, &c.* I believe there are altogether upwards of 3,000 tanks in the District. At Chingleput itself within an area of ten miles, there are upwards of ten tanks of smaller dimensions, in addition to which there are seven or eight square tanks paved with stone in the town and its vicinity, which are used for the

purposes of ablution as well as for drinking. There are also a number of good wells about the District, every village having a few.

A brook rising in the tank of Thennary in the Conjeveram taluq passes along the western side of Chingleput a mile distant from the town and empties itself into the Palar river. It is covered by a bridge of three arches on the high road to Wallajabad, each arch having a span of 25 feet. This brook is deep and generally contains water throughout the year, and is resorted to by the town people during the dry seasons in consequence of the failure of the water in most of the wells and tanks in the town.

Geology.—Scattered over this District are various ranges of small mountains with detached hills and rocks of primitive origin; the greatest does not exceed 500 feet in height, and huge masses of granite are met with over-topping and underlying the surface; these seem to belong to three different periods.

Granite, in a state of decay and disintegration, is met with in most parts of the District a few feet under ground, and in sinking wells a deeper strata is frequently reached in all its integrity.

The face of the country is a flat level plain, occasionally breaking into a slight undulatory rise in some parts. In others the soil seems made up of red sand, frequently giving cover to a bed of gravel occasionally mixed up with laterite; the gravel possesses excellent binding qualities and is brought into play for road-making. The vicinity of Conjeveram yields some fine sand-stone, occasionally found variegated irregularly into brown, yellow and lilac colours. In some parts of the District recent tertiary and alluvial deposits are met with, and, as elsewhere noticed, rich magnetic oxides of ironand materials for pottery and glass are found to exist, as also various other coloured earths and kunker, or small nodular lime stone.

Fossils of wood and shells of various kinds have been found in the vicinity of Streeperoombadoor; I have only seen specimens of the petrified wood.

Soil.—The soil of the Chingleput or Madras District varies in different parts, being mostly gravelly, argillaceous, and loamy. But along the coast and for several miles inland it is sandy with a substratum of clay, whilst in the interior it is alluvial, and in the vicinity of the hills and some of the

high grounds it is composed of decayed granite and good binding gravel.

The District is extensively cultivated, rice forming the staple produce, in addition to which almost all the dry grains and pulses, Indigo, Sugarcane, Betel-nut and vegetables, European and native, are grown. At the same time, from the inability to command water in certain localities, the high lands are permitted to run waste, and become covered with low jungle in some parts; some of these might be turned to account by sinking wells in the neighbourhood; there is no doubt that springs exist in the soil and abundance of water might be obtained at a depth of from 30 to 50 feet below the surface.

The natives continue their ancient systems of cultivation, and, as a rule, do not practice the rotation of crops systematically. The lands are scantily manured. For rice-fields, recourse is had to leaves of trees, shrubs, and weeds, which are collected and buried in the rice swamps, and occasionally wood-ashes are used as manure. The cattle manure being generally used as fuel, the cultivators are thus deprived of an important supply.

Agriculture continues much in the same state as it has been for years back, but the darkened mind of the ryot is being enlightened from witnessing the operations of our railways and telegraphs, and the ryots are daily becoming amenable to the introduction of new products and improved methods of culture with the use of manure and other improvements. But at present they are restricted to the use of their own "crooked sticks" as ploughs, and all the ancient agricultural paraphernalia. It is to be hoped, however, that the day is not distant when the improvements of the West in agricultural operations will be found to have their place in the East, and we should not feel surprised if steam and machinery supercede human labor and animal power.

The principal Irrigation works in the District in connection with agriculture are given below in a tabular form. These works are under the charge of the Superintending Engineer of the 4th or Madras Division, who has under him a staff of six Assistants, one Supervisor and seven Overseers, distributed over the District, which is divided into four ranges, to each of which various officers are nominated to superintend and carry out all public works connected with irrigation, roads, and public buildings in the District.

ıe following are the Irrigation works of importance in the District of Madras :

ınge No.	Village.	Tank, Anicut or Channel.	Taluq.	Remarks.
I.	Red Hills..........	Tank....................	Sydapet	
	Tinnanore...........	Do.	Trivellore	
	Goodapaukum......	Do.	Sydapet	
	Casaveram	Anicut and Channel..................	Chingleput	
II.	Chembrumbakum	Tank..........	Sydapet	
	Corattore............	Anicut and Channel	Chingleput	
II.	Tennary.............	Tank...................	Conjeveram	
	Coorum...............	Do.	Do	
	Govindavady.......	Do.	Do	
	Moneymungalum..	Do.	Trivellore	
	Condunghy..........	Do.	Chingleput	
	Streeperamadoor..	Do.	Conjeveram	
	Manumbady.........	Do.	Chingleput	
	Chingleput..........	Do.	Do	
	Cumbumkal	Channel.............	Conjeveram	
V.	Madranticum........	Tank..................	Madranticum	
	Ootramallore........	Tank and Supply Channel........ ...	Do	
	Carieneolothoor...	Tank..................	Conjeveram	
	Yadamichy..........	Do.	Do	
	Salavancum...... ..	Do	Madranticum	
	Camarayapoorum.	Do.	Conjeveram	
	Pennayar............	Do.	Madranticum	
	Caliapet River.....	Channel.............	Do	
	Pennuyar do.	Do.	Do	

Bungalows.—There are at present ten Government bun-ılows in this District for the accommodation of travellers. ıe following are the stations in which they are to be found :

1. Atcherawauk.
2. *Chingleput.
3. *Goodoovancharry.
4. Carangooly.
5. Goomadepoondy.
6. Meenumbauckum.
7. Palavay Chuttrum.
8. Sadras.
9. Tripassore.
10. Poonamallee.

The two bungalows marked thus* are partially furnished, and have servants in attendance to meet the traveller's convenience, for which he pays a fixed rate of a rupee a day, or eight annas for a stay not exceeding six hours, for each room occupied.

Roads.—Three great trunk metalled roads pass through the District, the Great Western, Southern, and Northern. The Great Western runs upwards of fifty miles in the District, passing through the Conjeveram and Sydapet taluqs. It was at one time a great thoroughfare, but since the introduction of the Railway has fallen comparatively into disuse.

The Great Southern Trunk Road extends some sixty miles, and is a considerable thoroughfare, passing through the Sydapet, Chingleput, and Madranticum taluqs.

The Great Northern Trunk Road runs for some 35 miles through the Sydapet and Ponari taluqs. There are a great many feeders to these, for the most part unmade and a few simply marked out and bridged in some places.

Railway.—The South West line passes through the Sydapet and Trivellore taluqs for a distance of 29½ miles. The stations in the District are Perambore, Avady, and Tinnanore in the Sydapet; Trivellore in the Trivellore, and Cudumbathoor in the Conjeveram taluq.

Tramway.—A tramway is under construction from the Arconum Junction of the Railway, in the North Arcot District, to Conjeveram.

Canals.—The Eastern Coast Canal, passing towards the north, unites with the Pulicat lake, and thus forms a water communication with the adjoining District of Nellore. On the southern side it runs some fifty miles from Madras, and is continued up to the Palar river. A good deal of traffic is carried on in these canals by means of boats.

Telegraph.—Several lines run through the District, but the main lines are the Great Southern, Western, and Northern. The stations of St. Thomas' Mount, Palaveram, and Poonamallee, are connected by telegraph with Madras.

Population.—The District contains a population of 583,462, and, amongst the number, almost all the different castes met with in Southern India are to be found. The principal are Hindoos, Brahmins, Pariahs, and Mahomedans; among these an infinite number of sub-divisions exists. The supposed aborigines of the District are met with under the

name of *Yenadie*, *Villie*, *Irruler*, &c. The greater part of these have no particular occupation and do not understand agricultural business. They simply barter the produce of the jungle in the shape of honey, firewood, medicinal roots, &c., for articles of food or clothing. They lead a semi-civilized life, and eat all kinds of animal food, not excepting the hyena, jackal, and rat. They talk the language of the District, more or less corrupted. Vide Proceedings of the Madras Government, Revenue Department, dated 17th May 1864, for an account of these people.

Dwellings.—These vary from the simplest hut to the magnificent house built after the European fashion. The huts of the poor are very rude constructions, consisting of mud walls plastered over a few stakes, thatched with palmyra leaves or thatch grass, with a solitary opening $2 \times 2\frac{1}{2}$ feet high for an entrance. These contain no furniture; a common mat serves as bedding to the occupants, who sometimes have not even that, the cloth they wear and a few earthen vessels constituting their all. The more wealthy are beginning to follow the European fashion in the use of furniture, and as opportunities offer they pick up a few odds and ends in the way of old chairs, tables, cots, &c.

Diet.—The diet of the upper classes consists principally of rice, ghee, vegetables, &c.; a few eat flesh and indulge in its use occasionally. The poorer classes live on rice or dry grains, according to the season. The latter are usually converted into meal and made into porridge or cakes, seasoned with greens or such vegetables as they can procure, simply boiled with salt or mixed with condiments and made into a curry. The lowest classes gloat over the carcases of dead animals, as cows, horses, &c., whenever they can get them.

Employments.—There is a large number of weavers in the District; artizans and labourers of all kinds are met with and are always able to find sufficient work of some kind or other. Many of these possess considerable skill as carpenters, smiths, stone masons, &c., but the chief employments are agricultural.

Amusements.—These are chiefly the feasts, &c., connected with their religion; occasionally they get up a native drama and are fond of their own hideous *tom-toms* and music, and will leave work for anything in the shape of sight-seeing. Nothing is too puerile to captivate their senses or to afford them amusement.

Customs.—These, with their ceremonies, are endless, and, for the most part, too unmeaning and numerous to detail. The people are extremely superstitious, and endless ceremonies are performed and sacrifices offered to blight the "evil eye," to drive away evil spirits, to invoke a blessing, injure an enemy, &c.

Morals.—Their morals are extremely base, purity of mind and body is not respected, their habits are unchaste, and the language in daily use among their own families and friends most obscene and indecent.

The women bathe with the men in public, their bodies half-naked, and the few clothes about them wet and clinging to their persons. But, with all this disregard of the exposure of their persons, to be spoken to or touched by a male before others is considered a great dishonor.

Education is now making rapid strides throughout the District. Excellent English and Vernacular schools have been established at Chingleput, Wallajabad, Conjeveram, and Trivellore by the Free Church of Scotland's Mission. At Conjeveram there is also an Anglo-Vernacular school endowed by the Trustees of Patcheappah's Charity, and a Sanscrit school established by the late Honorable Sadagopah Charloo. Besides these, there are Government Taluq schools at Trivellore, Streepermadoor, Ponnary, Conatoor, and Poonamallee. In the last-named place there are also one or two English schools, and almost every village has its own school. But the lower classes are for the most part entirely precluded from sharing in these advantages, for, although the taluq and other schools, not even excepting those of the Mission, are nominally open to all classes of the inhabitants, they are practically closed to Pariahs and other low caste boys. The fact of heathen and caste teachers being employed in Christian schools has much to do with this; and, on the other hand, the masters themselves, even when so inclined, have not the moral fortitude to break through this exclusiveness, through fear of breaking up their schools; but this is a fallacious idea, as I have seen good instances in one or two places, where on account of the admission of low caste boys, the schools were for a short time partially forsaken, but the pupils were glad to return to them ultimately.

These poor out-castes (Pariahs) constitute the great mass of the population, and efforts are necessary to benefit them

as it is apparently the policy of the higher castes to shut out knowledge from them to suit their selfish ends. But I hope the time is drawing near when they will share in privileges to which they are as much entitled as those who now monopolize them.

Mode of rearing children.—The usual way is to suckle the infant for six months, when solid food is gradually administered. There are, however, no particular rules as to the limit of the period of suckling, and I have seen children three years old pulling at the mother's breast. In a great measure, the period children are suckled depends on subsequent pregnancies of the mother. The new-born infant is carefully tended and reared, except when the parents are in great want, and even then the mother will yield the last drop to her helpless child. The child usually runs naked until it attains the sixth or eighth year of its age.

Infanticide and criminal abortion.—These crimes are to some extent prevalent in the District, and are chiefly the results of early marriages and the prevention of the re-marriage of widows by caste usage. The Hindoo caste rules are so stringent, in the latter respect, that families frequently connive at such occurrences to prevent disgrace. In so doing, they do not think of the heinousness and moral iniquity of the crime, but countenance it in order that the delinquent may retain her caste privileges and social position.

Instances frequently occur when justice follows in the wake of such crime, and the criminal and her abettors are dealt with according to law. There were twenty-two cases of this nature reported in 1863, and twenty-seven persons convicted for the crime in this District.

State of the poor.—The poor are almost uncared for, although the natives in general are well known for their charity; it is exacted not so much from benevolent feeling or the relief of the poor, as for the support of their religious edifices, priests, and festivals, for the promotion of which large sums are ostentatiously given. There are no doubt many exceptions to this rule, but generally it is not the starving poor who are benefited by their charity, but those who may be denominated *fat beggars,* (religious mendicants) who are feasted and fed at almost every place they go to. Poor houses are not known; the only Institution bearing the name is one at Conjeveram, which was endowed by the late Patcheappah Moodelliar for feeding religious mendicants,

of whom twenty-four receive alms daily, and on festive occasions. I believe the number is unlimited. But this may be looked upon more as a religious than as a charitable Institution for the benefit of the poor. The only Institutions having this for their object are the Civil Dispensaries at Chingleput and Conjeveram, where the *sick* poor are relieved, supplied with necessaries of life, and their ailments, often complicated, treated medically and surgically.

Prevailing diseases.—Endemic.—Fever and Ophthalmia are common among the inhabitants of this District. The prevailing type of fever is Quotidian, which, when neglected, frequently terminates in Remittent and Typhoid. The disease is generally of a very simple kind, brought on by exposure to cold, &c., but from being frequently neglected I have reason to believe that a large number annually fall victims to it.

Catarrhal ophthalmia is chiefly met with among children, and seems to be frequently connected with some disorder of the digestive system, and the presence of worms in the alimentary canal; a few doses of santonine and calomel with jalap often removing the affection of the eye as well as expelling the worms, only corroborates the fact of an intimate sympathy existing between the mucous membranes in the affected parts of the system. When, however, the case is placed early in the hands of some of the Vythians or native quacks it is not unusual to see it terminate in almost total destruction of the cornea, and irremediable blindness caused by the application of acrid substances to the inflamed organ.

Scrofula, in incipient or advanced stages, is frequently met with among the children of the very poor, and one ceases to wonder at its prevalence when he has visited the interior of some of these huts where the children are born and live. In a few cases, distinct evidences of its being associated with a syphilitic taint present themselves.

Epidemic diseases.—Cholera.—Cholera and small pox prevail epidemically in the District, frequently throughout the year; if either of these diseases quit one part of the District, it is only to re-appear in another. With reference to cholera, it is frequently brought on by the annual gatherings at Hindoo temples in different parts of the District. On such occasions, vast numbers of people congregate, exposed to all the vicissitudes of the climate, and, for the most part, living

and sleeping in the open air and subsisting on anything they can get.

None of the native towns in the District are particularly cleanly, and when these festive gatherings occur the air is thoroughly vitiated with the gases from the decomposition of human ordure and vegetable and animal refuse, &c. Under these circumstances we need not be surprised at the occurrence of cholera. But the evil does not stop here. When the festivities cease and the crowd disperses, each individual carries the germs of the disease with him, more or less, from village to village, infecting every locality he passes through to reach his destination.

That cholera is infectious and capable of travelling along great thoroughfares, is undisputed. The opinions recorded by my predecessors are sufficient to clear up any doubts that may exist on the subject. Dr. Hamlyn writes on the 1st July 1839, " Cholera was brought into the bazaar here by a native, not an inhabitant, who died here on the way to his village. It appears the disease broke out about the middle of the feast (at Conjeveram), and that the deceased, with many hundreds, left immediately the disease made its appearance. A companion of the above died of the same complaint a few miles before he reached Chingleput."

In the Annual Report of 1853, Dr. Currie writes of this disease (cholera), " I may mention that two cases (both of which proved fatal) were admitted into the hospital later in the season, but they were not inhabitants of this place."

Dr. O'Neill writes in July 1857, " This dreadful disease (cholera) first made its appearance by attacking a tappal runner on the Madras road on the 7th June, and since that time two or three cases have occurred daily, out of which it has numbered thirty-four victims up to the present date."

In the Jail Report for 1859, it is stated cholera was imported into the town on two or three occasions by travellers passing through. A few cases occurred in the town, but the prisoners and the detachment of Veterans kept free of the disease.

In the Annual Report of the Civil Dispensary for the same year, it was remarked :—" A few cases of cholera occurred in the town in the month of September. The disease was traced to have been brought in here from Wallajabad, where, and in some of the other taluqs, it had been prevalent for

some time. On the 22nd November, a detachment of recruits, to the extent of 200, encamped here, having cholera in camp; they buried three men. On this occasion the disease hung about the town slightly for a few days, and then disappeared."

Such are the proofs given of the capability of this insidious disease being carried about from place to place; that it is infectious can also be proved. In 1857, the female servant of one of the Missionaries then resident in the Fort, went to see her son who was seized with cholera at the village of Nutham. The boy died, and she returned to her work, but was seized with cholera on the third day, and died of it. At this time the disease was not about the Fort, nor did any cases occur after this. Dr. Farquhar, in his observations on the Civil Dispensary in September 1860, states. "Another of the fatal cases was that of a woman who contracted it (cholera) when attending in her own house on a son who recovered. While she was in hospital, another son waiting on her was seized, but he recovered." I can call to mind several other instances where the disease was contracted by attendance on the sick. A point worthy of remark is that, in persons exposed to cholera contagion, should the system not be in a fit state to receive the disease at once, it nevertheless clings to the individual and takes advantage of the most favourable opportunity to attack him, in the meantime passing through a period of incubation.

Cholera, although prevalent in the District, frequently for most of the year, prevails to the greatest extent from the first appearance of the hot weather to the complete setting in of the rains.

Many theories have been broached as to the origin and manner of the propagation of the disease, but none have as yet thrown any light on this perplexed subject. There can, however, be no doubt as to its propagation from case to case by some subtle poison arising from the seat of the disease.

Several instances of the disease having been caused purely by fear have come under my observation; intemperance also is believed to be a fruitful source of cholera. As far as my own experience extends, it appears to me that the system is frequently protected whilst under the influence of stimulants, but the moment the effect of these is lost, the depression that follows at once favors the taking on of the disease, as, for instance, on the termination of a "*spree*" or debauch.

e had numerous instances under my observation of aking the disease at Conjeveram and arriving here ent good health and dying a day or two after, and en leaving Madras in health (where they acknow- aving been exposed to contagion) coming here and the disease several days after having been exposed luence. The last occasion was on the 24th Febru- , when two bandymen belonging to this place, on urn after disburthening their loads at Madras, were in transporting the hospital tents belonging to Her s 74th Highlanders from Guindy to Palaveram. On nent shifting its quarters in consequence of cholera, opriated to their own use the straw they found under s, and which had been previously used by cholera ; on their way homewards they had been sleeping raw, and both were seized with the disease and fell o its virulence the day after their arrival here. Some ree days after their deaths, cholera broke out in the ing to which two individuals seized with the disease nitted for treatment into the Civil Dispensary, and o days after the admission of these cases two in the hospital took the disease, one died and the overed.

pox.—This disease scarcely ever leaves the District, at no time entirely free from it.

igh every effort is made to promote vaccination, it sible to eradicate small-pox whilst the natives deify tribute it to the presence of the goddess *Mariatha.* ment is resorted to by them, but a few unmeaning es are performed and sacrifices offered to appease h of the goddess. No attempt is made to isolate sed from the healthy ; all congregate together, and he scabs from the pustules have dropped, if the s sufficiently strong to move about, he mixes with le of the village, wearing the same dirty cloths, now l with infectious matter, which he wore during his Jnder these circumstances, can we wonder at the pre- and persistence of the disease. I have witnessed · of secondary small-pox in a leper. The same was in the 5th volume of the *Madras Quarterly Journal of Science,* and will be found at page 187 of that volume.

ation.—The Zillah Surgeon is the Local Superinten- l he has under him a staff of six vaccinators, one to

each taluq. It is impossible, with such a small staff of operators, to do much. Although the benefits resulting from vaccination are acknowledged by the native population, it is sometimes objected to on the ground of their not being accustomed to it, at other times the most stupid and absurd excuses are made. Even should they submit to have their children vaccinated, all kinds of objections are raised to allow of lymph being taken. They will not take their children to any distance for this purpose, and lymph on glass frequently deteriorates in the course of twenty-four hours in a tropical climate; at least, it is never satisfactory. Mothers take alarm when the lymph fails, and the children have to be cut a second and sometimes a third time before the operation succeeds.

These are some of the obstacles to the progress of vaccination. The staff of operators is too small; a larger number is required in order that each village may be visited several times in the year. By thus keeping the subject constantly before the people, they might be induced to adopt it much more generally than they do at present.

Several instances have occurred where small-pox has followed successful vaccination, but in all these cases the varioloid form of the disease shewed itself, a few scattered pustules appearing, of which only a small number are umbilicated, and the disease is generally very mild.

Measles prevails to some extent epidemically in the villages of the District. Sometimes it is found prevalent at the same time as small-pox, and the people confound one with the other.

Sporadic diseases.—Very many diseases, not even excepting cholera, are occasionally *sporadic* in the District, but the more ordinary of them are Ephemeral Fevers, Dysentery, Diarrhœa, Dyspepsia, &c, arising from cold, fatigue, improper diet and other acts of imprudence, and are of frequent and every-day occurrence. Under this head, syphilis and gonorrhœa may also be noticed in consequence of the numerous Hindoo temples in the District, each having its gang of dancing girls or prostitutes. Independent of these, other prostitutes of almost every caste flock here during the annual feasts to ply their vile trade, and during these occasions much venereal disease, especially gonorrhœa, is propagated, not only among the visitors but among the residents; occasionally also aggravated cases of secondary syphilis come under observation.

Hereditary diseases.—Under this head, Phthisis, Leprosy, and Cancer may be confidently entered. *Phthisis* being inherited, is frequently aggravated by impoverished food and the inhalation of foul polluted air arising from the filthy state of the neighbourhood in which most of the residents live. The hereditary taint of *Leprosy* is questioned by some authors. I have had many opportunities of tracing this disease to an hereditary descent, which, no doubt, is aggravated by improper hygiene. The natives will frequently attribute the disease to the bite of the *Uropeltis grandis* or *Munullee pamboo,* which is said to possess a head at each extremity which are used by the animal six months alternately. Such stupid fables are frequently current amongst the best informed of the natives.

Cancer.—The most frequent seat of this disease is in the face, next in the breasts, and lastly on the genitals; occasionally it is met with also in the orbit.

Feigned diseases, as a rule, are not known in the District. In one or two instances which came under my observation, attempts were made in criminal cases to feign unsoundness of mind, but these futile attempts were too superficial, either to perplex or deceive, to be successful.

Local diseases.—Under this head every variety of ulcers and abscesses are met with (and wounds among violent diseases) aggravated greatly by want and neglect, the subjects themselves frequently tainted constitutionally with syphilis or scrofula.

Sanitary state of the District.—It is impossible to give a detailed account of the state of the various villages and towns. With the exception of the three Military Cantonments, and one or two other places in which Europeans or East Indians are located, scavengers are altogether unknown in the District; indeed, they are not even permitted to enter the streets of most of the caste villages, nor even to approach them; and the result is, that the vicinity of villages abound with filth of every description and rubbish in the shape of vegetable and animal matter lies rotting here from one end of the year to another, poisoning the air with its noxious effluvia. Either the public streets or the enclosures forming the yards of dwellings are frequently quarried to find materials in the shape of earth for raising the walls of their huts,

and these pits are subsequently filled up with night soil, cattle droppings, sweeping, &c., thus becoming receptacles for filth, forming during the rains the most offensive stinking, pestiferous, stagnant pools, and poisoning the air around. Privies are unknown in any of the native villages. In some of the larger towns, some few of the more wealthy excavate holes for the reception of the night soils in their yards, and as soon as one becomes filled up another is opened out. From the vicinity of these to wells, the source of water supply is frequently polluted. The mass of the people make use of the unfrequented streets, bye-ways, and corners in and around the villages or towns. At most of the villages where annual gatherings take place, the pollution of such places from the deposition of cattle droppings and night-soil, &c., from crowded throngs of people and the numerous cattle and other animals that are huddled together on such occasions, is something beyond description, when it is remembered that these gatherings generally last from ten days to a fortnight in the hottest part of the year with no means of scavenging the place, whilst the village pigs and dogs are the only scavengers, and these are insufficient in point of numbers to carry out the work successfully. The crowds of people, with the cattle, &c., make the streets and principal thoroughfares their halting places; and when we take into consideration that the habits of the people are ordinarily filthy; that the majority of them are perhaps paupers attracted to the place by the feast, and that these either live on green vegetables and other improperly cooked food from the want of fuel and other conveniences, or they eat anything and everything they can get hold of in its raw or unprepared state; when we consider all this, we need not wonder at these places becoming the centres for generating deadly and infectious diseases on these occasions.

The water supply is not only inadequate in many places, but it is also very foul. With the exception of a few wells resorted to by some, perhaps the majority of the residents have recourse to stone-faced and other tanks for the purpose of drink as well as ablution. The supply to these tanks mostly consists of the surface drainage of the neighbourhood, carrying with it much of the night-soil and droppings of animals, and it now receives a further addition from the constant resort of men, women, children, and animals of every description, who not only wash their tainted and foul skins, but their clothes also in these places, struggling with each

other for space, so crowded are these tanks on such occasions. If the fluid from any one of these tanks be now examined, it will be found to have attained almost a syrupy consistence, and abounding with vegetable and other organic remains. This is the kind of water the multitude not only drink but cook their food with.

There are no restrictions as to burials. These, where Mussulmen comprise the inhabitants of a village, are intra mural, frequently in the vicinity of wells or on the tank *bunds*, whilst the Hindoos cremate or bury their dead bodies on the outskirts of the villages. When the latter method is practised, the bodies are frequently placed within a couple of feet of the surface of the earth, so that the graves are plundered at night by jackals and hyenas, and the mangled remains are frequently met with in a piece-meal condition in the vicinity of the place; and even where cremation is practised, from a want of sufficiency of fuel, the blackened remains are met with frequently dragged about the vicinity by canine animals. Under such a state of things, can we be surprised at the frequent generation of zymotic and epidemic diseases, which, originating and being localized in such spots, soon attack and disperse the multitude, and the diseases themselves find scope in following the stream of human intercourse, thus spreading far and wide, frequently devastating villages and reaching some of the principal towns in search of fresh victims, and becoming localized wherever a nidus of filth is to be met with, to afford them support and food for further mischief. This state of things can only be realized to its fullest extent by ocular inspection, and it loudly calls for removal. The only way in which it can be remedied is by the appointment of a District Health Officer, who should in his duties be ably seconded by the Police. Periodic visits should be made to each of the principal villages, and every village or hamlet should have its public privy and be made to maintain a scavenger, whose duty it should be to keep the village privy clean under the supervision of the Police, and subject, as already suggested, to the supervision of the District Health Officer. If some such supervision be strictly carried out, it is possible that epidemic and zymotic diseases will soon become eradicated from the District, and eventually become matters of history.

Christian Churches.—The principal Christian Churches and Chapels in the District are as follows:

PROTESTANT.

1. *Church of England.*—St. Thomas' Mount and Poonamallee.

2. *Wesleyan.*—St Thomas' Mount.

3. *Independents, (London Mission).*—Tripassore.

4. *Additional Clergy Society.*—Pulicat.

5. *Leipzig Evangelical Lutheran Mission.*—Sadras.

ROMAN CATHOLIC.

1. St. Thomas' Mount.
2. Poonamallee.
3. Palaveram.
4. Small Mount.
5. Kitchary.
6. Ponnoor.
7. Pulicat.
8. Ootramalloor.
9. Covelong.
10. Chingleput.
11. Wallahjabad.
12. Periapollium.
13. Tripassore.
14. Trichoor.

PRINCIPAL MAHOMEDAN RELIGIOUS EDIFICES.

Conjeveram.—Ahmed Howlea.

Trivatore.—Peer Pylivan.

Palaveram.—Buddoo Syeed.

Covelong.—Thairna Niensaree.

The principal Hindoo religious edifices are given in th accompanying tabular form :

Principal Hindoo Temples in the Madras District.

Taluq.	Name of Villages.	Name of Temple.	Sect.	Chief feast annually or monthly.	REMARKS.
Chingleput	Terookyhe Coondrum.	Vadagheeree Eswarar... ...	Shiva		
Do.	Mahabalipooram.........	Tholusayeeua Peroomal ...	Vishnoo		
Do.	Singapermal Covil......	Singapermal	Do		
Do.	Tiroopooroor	Poroorur........................	Shiva		
Do.	Chingleput..............	Codundaperoomal...........	Vishnoo		
Do.	Nathum..................	Kylawsanader................	Shiva		
Do.	Terookatchoor............	Amoorda Deeyagor....	Do		
Do.	Annoor.....................	Vada Narraina Peroomal...	Vishnoo		
Do.	Vulleepoorum............	Audecasava Peroomal	Do		
Conjeveram.........	Conjeveram	Stree Davaraja Peroomal ...	Do		
Do.	Do.	Yagambra Eswarar	Shiva		
Do.	Streeperamadoor	Stree Bascharloo	Vishnoo		
Do.	Tinnanore.................	Budrayee Peroomal	Do		
Do.	Wallajabad...	Narasinga Peroomal.........	Do		
Madranticum.... ...	Madranticum	Codunda Ramasawmy	Do		
Do.	Teroopacoodul.........	Vurdarajah..	Do		
Do.	Viahwoor....................	Durmapooree Esooarar......	Shiva		
Do.	Do.	Venketasa Peroomal.........	Vishnoo		
Ponnaree.............	Periapollium.............	Bowany Ummaul	Shiva		
Do.	Ponnary......................	Curry Kistna Peroomal	Vishnoo		
Trivallur.......	Trivallur...................	Stree Veeraragava Peroomal	Do		
Sydapet...............	Poonamallee............	Putcha Peroomal	Do		
Do.	Trivatoor.....................	Deeyaga Rayer	Shiva		
Do.	Teroonagheeree.........	Runganader........	Vishnoo		
	Mylapoor..................	Appersawmy	Shiva		
	Do.	Cabala Eswarar..............	Do		
	Do.	Audeeossana Permal.........	Vishnoo		

(To be continued.)

ART. IX.—*Introductory Remarks* to a Course of Lectures on Diseases of the Eye,—Session* 1865-66. By GEORGE SMITH, M.D., Principal of the Medical College, Professor of Ophthalmology, and Superintendent of the Eye Infirmary.

THE place which the subject of Ophthalmic Medicine and Surgery occupies in the curricula of the senior and second departments of the College, as well as the advanced position it holds in the University Examinations for Degrees in Medicine, have not been assigned to it without good and valid reasons. Before successfully prosecuting the study of the diseased conditions of the organ of vision, it is necessary that you should have mastered the general principles of medical science. You have already studied the all-important subjects of Medicine and Surgery; you are, or ought to be tolerably conversant both with the theory and practice of these sciences, and, therefore, you are fittingly prepared to accompany me in the consideration of the subject which is to engage our attention here.

For, permit me to remark, ophthalmology is not a peculiar subject governed by laws of its own, which constitute it a separate science, but rather is it to be regarded as a carefully and successfully tended plot of the great field of medical science, enclosed by the same fences, irrigated by the same streams, and cultivated on the same principles. It is of importance that this fact should be distinctly recognized.

In the necessary and convenient sub-division of medical science into distinct branches, medical men have, perhaps, too frequently handed over certain departments to the cultivation of "specialists", by which term are meant medical men who have devoted themselves exclusively to the study and practice of special departments of medicine or of surgery. Now, I think that this is a mistake on the part of the profession, however great a convenience it may be, for it leads, somehow or other to the impression, that the diseases and derangements of certain organs, as of the eye for example, can only be treated safely and scientifically by those, who have made the affected organ the object of particular study:

* These remarks have been slightly added to since the lecture was delivered.

it being carelessly taken for granted, that the ordinary principles of medical and surgical science are not altogether applicable to these special fields of professional experience. When such views as these are carried to their legitimate conclusions, it follows, that the practitioner, voluntarily abandoning the study of diseases of the eye, relinquishes one of the most valuable and practical of the many fields of corroborative experience, and that the "specialist," overlooking those improvements which time effects in the common art and science, is apt to take it for granted that his science has principles and laws, which separate it from the great and more general field of medical and surgical experience. Whilst, therefore, recognizing, not only the convenience, but also the necessity of dealing with ophthalmology as a separate subject of study, I would at the same time impress upon you, as well as upon myself the principle, that it is the duty of every medical man to make himself conversant with the diseases and derangements of the organ of vision, and that it is the duty of every oculist to be thoroughly acquainted with the laws and progress of general medicine.

That this view is not a singular one, may be shewn by reference to distinguished authority. Dr. Jacob, in the preface to his well-known "Treatise on the Inflammations of the Eye Ball,"—a book, by the way, which I recommend you all to read carefully,—remarks as follows:—"It may not be prudent to say so, but I cannot refrain from observing that the more diseases of the eye have been engrossed by persons laying claim to their special treatment, the less have they partaken of the general improvement which time has effected in medicine and surgery. It cannot, I think, be denied that physicians and surgeons having neglected the subject from a belief that it was under the particular consideration of others, became less familiar with it; and now, when they would resume it, are less competent to do justice to its merits. I know that they will not admit the truth of this observation, and that many of them will consider it unjust; but I venture to make it, because I believe that the sooner its correctness is established, the sooner will the defect it indicates be repaired."

In my lectures I shall have constant occasion to remind you of the general laws of morbid action, illustrating many of them by examples selected from hospital experience, and tracing morbid processes from their commencement

to their termination in health, or in further changes and results. The eye affords special facilities for these studies, as well as for the study of the influence possessed by therapeutic agents in modifying or arresting the phenomena of diseased action, for it is evident that no where else in the human body have we an organ so complex in structure, which is so entirely patent to our study as the eye. Regarding the study of diseases of the eye from this point of view, Dr. West* makes the following suggestive remarks:—"It has been recommended by some most fitted to give advice, that the student of medicine should begin with the diseases of the eye, since, through its transparent coats, as through a glass, the various processes of disease and recovery may be seen transacted, and 'many of the little wonderful details in the nature of morbid processes may be learned, which, but for the observation of them in the eye, would not have been known at all.' The ophthalmic wards of an hospital must, indeed, be re-visited at a later period for the sake of the special knowledge to be obtained there; but they may well be visited at first for the elementary teaching which they afford."

The *cornea* is a window, through which, with the aid of the ophthalmoscope, the greater portion of the interior of the organ may be satisfactorily explored, and morbid action detected even in its earlier stages, whilst no inconsiderable portion of the external surface of the eye-ball lies under our direct and easy observation. The conjunctiva, cornea, and much of the sclerotic are before our eyes, and morbid changes in these structures are early and easily recognized. Of internal structures, none can be more easily and satisfactorily examined than the *iris*. Knowing, as we do, the natural color, lustre, structure and mobility of the iris in health, from the fact that it is clearly visible through the transparent cornea as a pendant vail floating in a transparent fluid, we can, at once, and with facility detect the presence and effects of inflammatory action in all the visible parts of the organ; such as, changes in lustre, color, structure, and function; the progress and exudations of the disease; the degenerations and changes of tissue; the implications of continuous and contiguous structures; the effects of nature and art in arresting and curing disease, with or without impairment of function, as well as the final results and

* Vide *Medical Times and Gazette*, October 28, 1865.

sequelæ of morbid action. The pathological changes which in other tissues must often be taken for granted, are all more or less distinctly visible to the observer of ophthalmic disease; their progress may be watched from day to day, and the success or failure of treatment may be accurately appreciated by all.

Again, there is no mucous membrane whose morbid alterations can be more closely studied than the *conjunctiva,* and the observations thus made can be mentally transferred to similar morbid states in other membranes of the same class. In the conjunctiva, we see what mean the terms anæmia, hyperæmia, inflammations, (acute, sub-acute, chronic, specific,) atrophy, hypertrophy, &c. These pathological conditions become, as it were, visible entities, whose origin, progress, and results may be distinctly recognized. Where, again, can the changes in fibrous textures induced by inflammation or strumous action be seen, but in the fibrous tunics of the eye, or the paralysis of muscular movement under inflammatory action, but in the iris, or the morbid changes of nervous tissue, but in the optic nerve and retina; where can we see various forms of degeneration of tissue so plainly as in the cornea and lens; where can we see the actual absorption of pus, blood, and exudates, but from the iris and anterior chamber; where can the process of atrophy be detected more accurately than in the choroid, or the effects of pressure more decidedly illustrated than in the anæmic and anæsthetic retina destroyed by glaucoma? Where can we see therapeutic action more satisfactorily than when studying the action of atropine and of mercury in iritis; and where can we see a greater variety of excito-motor and excito-secretory acts than in connection with the various morbid states of the eye, the result of direct or reflex derangement? The behaviour of wounds of the cornea, as after extraction, illustrates every variety of adhesion, and testifies to the influence exerted on the repair of tissue of such causes as habits, temperament, climate, diet, treatment, and epidemic influence. Where can embolus be seen but in the retinal arteries, and where can obliterated arteries, varicose veins, and specific exudations be more clearly recognized than in the delicate structure of the retina?

Then again, in studying ophthalmology, we learn to appreciate the wonderful sympathy which the eye maintains with the system as a whole, as well as with individual organs

of that system. Sympathy with general diseases such as measles, small pox, syphilis, struma, and other dyscrasias; sympathy with special affections of the brain, spinal chord, lungs, heart, kidneys, uterus, and organs of digestion.

In no other organ can the accuracy or inaccuracy of diagnosis and prognosis, as well as the success or failure of treatment, be so distinctly appreciated. In no other organ can the natural history of disease be more readily studied, especially in India, where, from sheer apathy and neglect, many diseases are allowed to run their course unaffected by medical treatment. Many other examples and considerations might be added, but those adduced will suffice to convince you of the importance of the study of ophthalmology, not only as it bears upon the treatment of the diseases of the organ implicated, but also as it serves to illustrate and facilitate the study of general disease.

Many, who would otherwise gladly study ophthalmology, are discouraged at the outset, in consequence of the vexatious multitude of details and divisions of the subject so pompously paraded, and, despairing of mastering the nosological minutiæ and pedantic nomenclature, turn aside to studies in which simple truths are conveyed in simple terms. But ophthalmology is not to blame for the faults of its zealous cultivators, and it shall be my aim, whilst making you familiar with all necessary nomenclature, to treat every subject which comes before us in a plain, simple style, as an extension, in short, of those studies, with which you are already familiar. At the same time, I would distinctly impress upon you my deep conviction of the value of *names*, for I agree with Dr. Laycock in maintaining that, "*in a name rightly invented is comprised our knowledge of the thing named.*" As professional knowledge increases, so will our vocabulary of names be extended. New names will appear, old names will change, many terms will become obsolete; were it otherwise, there would be good reason to suspect that medicine alone, of all the sciences, had ceased to grow. The terminology of sciences, judging from their present rate of progress, must be expected to undergo change every ten or fifteen years. We must, in fact, be students all our lives. We begin our scientific career by thinking we know every thing; soon the delusion is detected, and we then make sure we know nothing; experience brings a third and more sensible stage in which we begin systematically, carefully, and observingly to lay for ourselves the foundation

of real and useful knowledge. "*By pains and patience the mulberry leaf becomes satin,*"—so says an Eastern proverb.

There are difficulties, however, in ophthalmology which depend, not upon words but upon things. I allude more especially to those subjects embracing the derangements of function of the dioptric media of the eye, which have of late called forth the earnest and successful labors of the mathematical minds of England and of the Continent. To the practical results of the discoveries made in this field I intend to limit your attention. I have, however, one remark in connection therewith to make to students of the senior department, and it is this, that medical science now-a-days requires for its successful cultivation a preliminary general education of a high and complete kind. A high professional education should be the *complement* not the *substitute* of a liberal general education.

In our arrangements for study, Clinical instruction at the Eye Infirmary will occupy a prominent and most important position. A formal course of lectures delivered here in the Medical College is necessary, and cannot be dispensed with, but practical acquaintance with disease can be gained neither from books, nor from diagrams, nor from lectures, but from actual living examples of disease. In harmony, then, with the practice of other Clinical teachers of the College, our attendance at the Eye Infirmary will be improved by daily Clinical instruction; every case, as far as may be practicable and profitable, being brought under review. Gather up carefully and faithfully every crumb of instruction at these Clinical conversations. Dr. Latham has well and suggestively said that, *in hospitals there is always knowledge running to waste for want of some one to gather it.* If it is necessary, as I think it is, that you should carefully take full notes of my formal lectures here, it will be still more necessary that you should carry with you your note books to hospital, so that you may jot down and make your own, not only the casual remarks which fall from the teacher's lips, or what comes under your notice in the progress and treatment of disease, but also that you may record the simplest details of management and manipulation, for no detail of this kind is so insignificant that it may not some day be of use to you in actual practice. Remember that every case of disease which comes under your notice is a lecture, not given by a fallible teacher, but by Nature, the infallible teacher of all, whether professor or student.

In the Eye Infirmary, at which all of you, at one time or other, will have to do duty, you will learn as students not only to make yourselves familiar with the various diseases, derangements, and injuries of the organ of vision, but also with the contingent duties of the dispensary and operating room. Patients will be assigned to your care, and I advise you to keep Clinical reports of the more interesting cases which fall under your observation. I require your regular attendance, your careful and intelligent attention, your presence at all the operations, and your considerate and kind intercourse with all the sufferers, with whom you may be brought in contact. Remember, also, what Bacon says— "*he that questioneth much shall learn much;*" let that questioning, however, not be confined to teachers or to books, but let it extend to Nature herself, which, when rightly interrogated, rarely fails to afford, sooner or later, a satisfactory reply.

In all probability the graver operations will secure your ready interest and careful observation; but it is possible that the more simple operations and ordinary manipulations of every-day practice may appear to you so common-place and free from difficulty, that you need make no effort to master them, from an impression that they may be undertaken at any time without special practice. This, depend upon it, you will find to be a great mistake. Many a student falls into the mistake of considering an operation which he sees performed as easy of execution, forgetting entirely that what appears to be so easy is only easy to the practised and experienced hand. Many a student, who can describe most accurately every great operation in ophthalmic surgery, could not, if his life depended upon it, evert an upper eyelid, pass a probe into the nasal duct, open the eye of a refractory child, or remove a speck of iron from the surface of the cornea.

In the Eye Infirmary will be found, at present,* European, East Indian, and Native patients, and this will afford ample field for the study of these classes as subjects of ocular disease. Each class has its mental, physical, physiological and pathological peculiarities which deserve close attention and study, if you aspire to the merit of being careful observers and practitioners. Nor are these mere curiosities of Medical experience, but rather points of essential importance, influencing, as they do not only the whole natural history of

* European patients will soon be removed to special wards in the General Hospital.

disease, but also the principles and details of treatment. Mentally and physically, the native, regarded as the subject of disease, is a very different patient from the European, and this difference must be intelligently recognized, if you would not be misled by names, but be guided by entities.*

You will observe that the former color of the Infirmary wards was very dark, but that I have endeavoured to substitute for it a wash, approaching in color to a light French grey.

The proper shade of color of the walls of ophthalmic wards is a point of practical importance. It is evident that the piercing glare of polished white walls is too severe a trial for eyes suffering from disease, consequently it becomes necessary to subdue this glare and brightness, so as to avoid increasing the intolerance of light which affects photophobic eyes. On the other hand, however, it is necessary to remember that light, no less than air is necessary for patients, that light is the natural stimulus of the eye, and that confinement to wards with dark-colored walls acts prejudicial, not only to the eyes but also to the health of patients, making the former more sensitive to light, and the latter anæmic, more especially if the subjects be Europeans. It should be borne in mind that but few ophthalmic cases are intensely intolerant of light, and these can be protected, either by bed screens, by eye-shades, or by confinement to a special ward, the majority of cases being of such a kind, that moderate protection from light and glare is alone required; black-washed wards do well enough in the day-time, but early in the evening, when the white or grey-washed ward is still light and cheerful, they become dark, gloomy, and depressing to the spirits of the patients. They are, moreover, lit up with difficulty, and are generally filled with mosquitoes. Residence in such a ward for one month will infallibly induce catarrhal ophthalmia and *hospital anæmia* in an European, however well he may be fed, and however carefully we may insist upon his taking exercise in the open air.

The floors of the wards should have a subdued and uniform color. The dull red brick floor, enlivened with glaring white bands, is, perhaps, the most trying assortment of light and shade for a diseased eye which could be conceived. Screens

* To avoid repetition, I would here refer my readers to remarks in the xviith number of this Journal, vide pages 16, 17, and 18.

are useful, but are apt to interfere with ventilation. Screens fixed to the beds are useful in some cases, but, upon the whole, moveable screens are to be preferred. Whatever the arrangements may be, they should be such as in no way interfere with the free perflation of air.

The text-book* which has been appointed for your guidance is, perhaps, the best which could have been selected; but, in common with all purely English text-books, its details are not always suited to the peculiarities of Indian practice. The Englishman in his own country is a different man constitutionally from the Englishman long resident in India, consequently the practice which is suitable to the former, requires modification, before it can be made applicable to the latter. Still more must that practice be modified when we have to deal with East Indian and Native patients. In many of our patients we have to treat the destructive processes of inflammation, not by venæsection, leeches, purgatives and other depressants, but by tiding the constitution over the dangers with good food, stimulants, and tonics. In the Eye Infirmary you will never be called upon to bleed a patient, and very rarely to apply leeches.

In the case of the poorer natives, who constitute the majority of our patients, you will find that, as far as practicable, their ophthalmic diseases are treated without depressing remedies, and that when mercury is given its administration is carefully limited, and precautions are taken to repair, as soon as possible, the injury to the blood induced by its specific action. "He fed fevers," was Graves's motto; "we feed ophthalmic inflammations" must be ours, if we duly consider the feeble and broken-down constitutions in which so many of these inflammations occur. In accordance with these principles you will not be astonished to find that, in the case of the native patients more especially, alcohol is employed freely in the form of arrack, not only for its physiological action as a nervine stimulant, and for its obvious value as a nutritive agent, but also for its therapeutic value. When alcohol in this form is given to native patients suffering from diseased action in debilitated frames, it is surprising how rapidly and remarkably the whole system responds to the stimulus, and how speedily the

* The text-book is "The Principles and Practice of Ophthalmic Medicine and Surgery by T. Wharton Jones, F.R.S., &c." Dixon on Diseases of the Eye may be substituted for it.

character and type of the morbid processes undergo a change. I use this valuable therapeutic agent sparingly in the treatment of acute ocular disease in a comparatively healthy system, not because I disapprove of the administration of alcohol in such circumstances, but because we have, in the European and Native diet tables,* sufficient means at our disposal towards supporting, in an efficient and legitimate way, the general system under the inroads of acute disease. But in the treatment of many chronic affections of the eye in broken-down constitutions, you will find that stimulants are employed freely; the object being, by small and repeated doses to influence for good the nervous system generally, to stimulate the circulation, and improve the organs of digestion. In asthenic inflammations and ulcerations; in chronic unhealthy ophthalmias; in cases of traumatic injury of the cornea, threatening death of tissue; before and after the operations of extraction and of scooping out the lens; in old patients with feeble digestion and weak pulse, and in patients who have been more or less habituated to stimuli, the careful and continued administration of alcohol *in divided doses*, proves of incalculable value. The principle of giving the stimulus in small and repeated doses should not be overlooked. Every approach to intoxication must be studiously avoided, as subversive of the true therapeutic principle upon which alcohol should be administered in the treatment of disease.

In another point will the details of your text books tend unintentionally to mislead you. I mean as regards the descriptions given of the subjective symptoms of disease. Among the poor and uneducated natives, who form so large a proportion of our patients, you will find that the complaints of uneasiness, tenderness, discomfort, pain, &c., such as are detailed in your text books as symptomatic of certain states of ocular disease, are not true to actual life, being considerably exaggerated and overdrawn. The explanation being, that the nerves of sensation in the lower class of natives are less impressible than in the case of the European; the sensations of the native, in other words, are blunter, and consequently diseases, which cause inexpressible suffering to the European, occasion to the native only a moderate degree of uneasiness and discomfort. As, however, the nervous system of the native becomes more impressible from education and civilization, so

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* Vide Appendix No. 2.

"pari passu" will his sensibility to pain and suffering increa This opens up an interesting field of study to you, not o as students of ophthalmology, but as philosophical medi practitioners. In the most highly educated patients dowr the most ignorant subjects of morbid action, disease must expected to exhibit *polymorphism*, that is, multitudinous sha of modification; so much so, that in many essential featu the extremities of the chain will differ, materially, the from the other.

I must also call your attention to another point practical interest, which is, that you must be prepared to fi from your Clinical studies that many diseases of the are far less distinctly and sharply defined in nature than th are in your text books and syllabus. Take, for example, t great class of inflammations of the various tissues of the ey The morbid process, at its commencement, is frequent limited strictly to one tissue, but in its progress it extends continuous or contiguous structures, so that the disease, whi at first was limited, becomes more or less complicated. pure conjunctivitis, keratitis, sclerotitis, or iritis, for examp is only seen in the initial stages of those diseases; afte time, the *conjunctivitis* becomes complicated with sclerot and keratitis, the *sclerotitis* extends to the iris, and the p *iritis* ends by implicating the choroid, ciliary body, retina.

Again, there are diseases sharply defined by authors, treated of under separate heads, such as simple, catarr and purulent ophthalmias, which, in certain cases, you find to be, not separate entities, but successive stages of disease. Nature, in short, refuses to be shackled by nosological systems, just as she refuses to be tied by natural history systems. Her great types of disease readily discerned, and their specific characters may be ea defined, but intermediate between these typical forms, connecting the one with the other, are to be found m and most complex shades of morbid action, whose pre characteristics pass all correct definition. Our meth divisions, and arrangements look plausible and accurate, practically, you will find that the detailed distinctions more characteristic of the initial than of the advanced st of morbid action. Again, you will find many diseases of eye which defy strict nosological arrangement, in consequ of alteration and aggravation of symptoms, and the occurr

of complications, the result of that terrible malpraxis which is the too frequent concomitant of native treatment.

It is melancholy indeed to be the daily witness of eyes destroyed, not by disease, but by remedies applied for its cure, remedies whose effect is to leave the eye much more injured than had it been submitted to the uncontrolled action of the original morbid process. Experience in such wretched cases will soon lead you to this conclusion, that it is much easier and more successful to treat disease, than to manage and mitigate the results of bad, unscientific, and barbarous treatment. The native methods of treating diseases of the eye are rough and barbarous in the extreme; the simplest and most manageable forms of ophthalmia too frequently, under such irrational handling, becoming unmanageable, and ending in more or less complete destruction of the organ of vision.

There are difficulties too in the way of ascertaining from your native patients the history of individual cases of disease; which difficulties do not generally meet us in European practice. Few natives of the poorer classes can give their age with accuracy, or can indicate, within reasonable limits, the time when the disease under observation commenced. Fewer still can give any clear statement of the different stages of the malady or even of the most likely cause of it. In a case of cataract, for example, were the patient an European of the educated class, he would be able to give you a correct outline of the course of the morbid action; he would be able to specify the exact date when impairment of vision set in; he would tell whether that impairment first affected the right or the left eye; he would be able to assure you that the progress of the malady had or had not been accompanied with pain, and he would be able to give the day on which he first noticed that useful vision had ceased in one or other eye. With a native all this is otherwise. He often cannot tell you his own age, and, though he can indicate pretty accurately the day when he could no longer earn his daily bread, yet all the antecedent experience of gradually impairing vision seems to have totally escaped his observation. This arises from no wish to deceive or to withhold information, but from sheer want of observation and from apathy. He was able to work up to a certain time, and that time is, to him, the date of the commencement of the disease.

We shall see, I have no doubt in the course of our Clinical experience, two classes of very miserable and hopeless cases,

arises from opacities of the cornea, the results of which, in their initial stages, were almost all remed

To those of you whose destination is the Medical nate Service, the careful study of occasional cases of *ing* will prove of great advantage. So long as the granting one anna batta daily to out-patients was these cases presented themselves in considerable Now, since the abolition of the donation, fewer ca but still examples are by no means infrequent. Care vation alone can enable you to distinguish real from diseases.

In conclusion, I would warn you against fee couraged at the difficulties experienced in dete morbid changes, indicated by me as having taken pl of the tissues of the eye. Remember that your ey education and practice before they can *see* object kind. It is only after considerable practice that yo in the native eye, the changes of color, lustre and which indicate the existence of iritis, for example. Y in fact, learn to see by knowing what to look for. morbid changes, which are at first invisible, becon time, so distinct and easily detected, that you will wo it ever could have happened that you overlooked th

Before concluding these introductory remarks to t permit me to call your attention to the table before yo embodies the results of the experience of the Eye

Table of Diets for Hospitals of Native Sick.

Articles Comprising the different Heads of Diets for a Day.

Avoirdupois Weight.

Spoon.	Milk.	Low.	Full.
Sago 4 oz.	Bread 12 oz.	Mutton in broth 6 oz.	Mutton for Curry 8 oz.
Sugar 2 ,,	or,	Bread 12 ,,	Rice* 8 ,,
Milk 6 ,,	Rice 12 ,,	Butter 1 ,,	Curry Powder ¼ ,,
Rice. For Conjee 2 ,,	Milk 2 pints.	Onions 1 ,,	Country Vegetables 4 ,,
Salt. Water 2 drs.	Sugar 2 oz.	Barley ½ ,,	Hopper† No. 6
	Rice For Conjee 2 ,,	Flour ½ ,,	Bread 8 oz.
	Salt. Water 2 drs.	Salt 1 ,,	Butter 1 ,,
			Salt 1 ,,

* Or Rice 1 lb. omitting the Bread.

† Hoppers to weigh 2 oz. each when cooked.

The weight of Meat in the above diets to be exclusive of bones.

In cases in which the Medical Officer considers it necessary, Tea ¼ oz. or Coffee 1½ oz. per diem may be ordered with any of the above diets; when given with Low or Full, Sugar 1½ oz. and Milk 6 oz. will also be allowed.

ART. X.—*Typhoid Remittent Fever at Bangalore.* Report by Deputy Inspector-General of Hospitals E. BALFOUR.

(*Communicated by the Principal Inspector-General, Medical Department.*)

No. 1775.

OFFICE OF DEPUTY INSPECTOR-GENERAL OF HOSPITALS,
MYSORE DIVISION.

BANGALORE, 28*th September* 1865.

TO THE SECRETARY TO THE
PRINCIPAL INSPECTOR-GENERAL,
Medical Department, Madras.

SIR,—I have had the honor of reporting to the Principal Inspector-General, Medical Department, the occurrence, in Bangalore, of fever of a severe form.

2. There has been a considerable prevalence of intermittent fever; but the disease to which I have alluded in my communication has been of a low remittent form, rapidly running into a typhoid state.* While Inspector-General W. Mackenzie, C.B. and M.D., was at Bangalore on other duty, I took the opportunity of showing cases in the Cantonment Civil Hospital and amongst the followers of the Royal Artillery; and, as now in the orders on my Diary of the 28th ultimo, he then suggested the transmission of a report on this disease, I had already requested from each of the Medical Officers serving here a report on its character, and I beg to enclose their replies.

3. It will be observed from these replies that a feature of this ailment has been the rapidity with which a state of depression and even of collapse supervened. Indeed, the rapid prostration has been one of the most marked symptoms in all

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* The Medical Officers in their reports designate the fever as under:—

Surgeon Major M. Rogers.—"The character of the fever * * * has been of a low remittent type, rapidly running into a typhoid state."

Brevet Surgeon T. Lowe.—"The prevailing type of the disease has been typhoid, * * the fever has been a bilious remittent fever of severe character and typhoid form."

Surgeon C. C. Rutherford.—"Typhoid fever."

Assistant Surgeon W. O'Halloran.—"I have no hesitation in pronouncing the disease genuine typhoid fever."

Assistant Surgeon W. Farquhar, M. D.—"A malarious fever, in the early cases scarcely distinguishable from intermittent fever. In other cases taking on a remittent or a continued character; but in all cases having strong proclivity, when uncontrolled, to run on to a typhoid state."

Assistant Surgeon Henderson, M. D.—"The fever now prevalent in this place I consider to be a form of bilious remittent of a low adynamic type."

cases, and has called for a liberal use of good food and stimulants.

4. In looking through the Topographical report on Mysore, the epidemic of this year more resembles the ailment described at page 73 as having occurred in Bangalore in 1820-21, than any other noticed in that Report. But, besides that the Report at page 73 mentions the disease of 1820-21 as having been an intermittent, the record is too brief to admit of a close comparison being now instituted. In the epidemic of this year, however, the jaundiced conjunctiva, the gastric irritability, the vacant expression of the countenance, and the nauseous odour from the body, alluded to there, have been present; but, in very many of this year's cases diarrhœa has been present; there has been delirium, and a tendency to local congestions and inflammations, none of which are noticed as having occurred in the ailment of 1820-21. This tendency to congestion and inflammatory action, in one or more internal organs, has been observed with a frequency which would seem to mark it as a characteristic of the epidemic.* Also, although remittent fevers of a severe form are of common occurrence in many parts of the Mysore country, and the cases of severe intermittent which are noticed as having occurred in 1820-21 seem to have resulted from exposure to a malarious atmosphere in the district, in this year the epidemic of fever has prevailed amongst classes of the Bangalore community permanently dwelling in the city. On these points the epidemic of this year seems to differ from the disease described in the Topographical report as having occurred in 1820-21, and as I do not remember to have observed noticed by any authority the occurrence in this town of a bilious remittent fever of a typhoid form as an epidemic disease, it may be useful to note the features of the malady which the Medical officers have observed; my own observation having been only since the beginning of June when I came to serve in this division.

A fever appeared at Cuddapah in 1825, and, shortly after-

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* Assistant Surgeon W. Farquhar, M. D., thus notices this peculiarity:—"More or less engorgement, turgescence or inflammatory condition of one or more internal organs, the liver being, in even the mildest cases, almost invariably congested. To my mind, a striking character of the disease is the want of uniformity as to the organs implicated, it appearing as if the various organs were attacked indiscriminately; and, in fact, one after another when the disease is unchecked."

wards, was described by Assistant Surgeon W. Geddes (*Additional Appendix, dated Cuddapah 12th March* 1827, *pages* 128 *to* 135.) He named it a "typhoid remittent" (28). In many features it resembled the Bangalore fever of 1865. In the Cuddapah fever there was an affection of the sensorium, not seen in the Seringapatam fever of 1824-25, (p. 128); delirium: muttering delirium; rousing when spoken to; hurried speaking; a vacant stare, a feverish anxiety to anticipate our wants: wild eye (129): dark red eye (130 and 132): deeply jaundiced eyes and suffused with red vessels: tongue nothing unusual (129): parched tongue (131): inclination to wander (132): pulse weak (131): looseness, fœtid stools: no overflow of bile (132); urine turmeric colored; and sudden failure of *vis vitæ* were the prominent symptoms.

5. In few of the cases here have there been other than very brief and irregular remissions. Instances have occurred where the skin has been hot, but, in general, the warmth of the surface of the body has been but little increased, and though, as before observed, the rapidity with which depression set in, the great prostration and prolonged convalescence have been features throughout, it was in the cases with little heat of skin that the emaciation, prostration, and tendency to collapse were the most marked. With some of the sick there have been profuse wasting perspirations.

The look of the sick has attracted the attention of all the Medical officers; there was a drunken or vacant expression in their faces. There has been much delirium, with a disposition to mutter or talk, and an inclination to wander about in a half-conscious state, the patients staggering in their walk. In others of the sick, there has been much mental obtuseness, or stupor, or a semi-comatose state, but sensible when roused, almost up to the moment of dissolution. In some cases twitchings of the muscles of the extremities have been noticed. The pulse has been generally small and feeble. There has been much troublesome lumbar pain, malaise, anxiety, distress, and restlessness. In one case, of a native, the whole skin was of a yellow color. The eyes of most of the sick have been of a deep gamboge yellow color, there has been much nausea and gastric irritability with frequent bilious vomiting.

A tendency to diarrhœa has prevailed, the patient passing copious gamboge yellow thin stools; and there has been a case in the Sappers, with large expectoration deeply tinged

with bile. The urine, in cases, scanty at first and of a deep yellow color, as the disease mitigated, became very abundant, often with an offensive fœtid odour or with a strong ammoniacal smell and a color even of a greenish hue. The tongue, in the severe cases has been dry and leathery, with sordes rapidly forming on the teeth; or the tongue has been laden with a greenish yellow fur. The thirst has been intense; and there have been tenderness and distension of the abdomen.

I have not myself observed spots on the body, but Assistant Surgeon W. O'Halloran, Royal Artillery, mentions that in two of the cases treated in that hospital petechiæ were observed, and in one case "the lower part of the abdomen was covered with sudamina." It has been the parotid glands, the lungs, the liver, and the bowels which have taken on inflammatory action. Parotitis has been frequent, running to suppuration with great rapidity: so early even in some cases as the second or third day, the throat, the face, and the head swelling into an unshapely mass: and the abscess bursting at the angle of the jaw, or throat, or the outer ear, discharging a very offensive pus in large quantities. Cases of bronchitis have occurred, and severe attacks of pneumonia; diarrhœa has been frequent, and attacks of dysentery have marked the course of this fever.

In two cases, where the liver was affected, amongst the Sapper Battalion, abscesses were reported to have burst, and the pus passed, in the one case, through the lungs, and in the other through the bowels. In a case of a European in the Garrison Hospital the lung was found filled with pus.

6. Owing to the variety of the internal organs implicated, and adaptations needed to meet the individual cases, it is not easy to give a brief summary of the treatment followed. Only four of the officers have noticed in their reports the treatment they pursued, but it may be described generally as having in all instances been dictated by the peculiarities of the case, while supporting the strength by food and stimulants. With the cases which occurred amongst the Royal Artillery followers, the Chlorate of Potash, Acid. Nitric., Dilut., Acid. Hydrocyan. Dilut., Bark, Quinine, and Spirit. Ammoniæ Aromaticus have been usefully employed; and arrack and food given, and careful watching exercised for the remission in order to administer the quinine. Turpentine liniments have been used, and when delirium

occurred much good was obtained by shaving the head and by the application of blisters to the nape of the neck. The skin was sponged with warm water. Only 6 deaths have occurred out of 79 cases, but the free fresh air has been a powerful agent in their recovery.

Brevet Surgeon Lowe, in treating the Madras Sappers from the neighbourhood of the market, mentions that he found a great intolerance of quinine in every case, and he adds, "I feel assured in some cases its administration was attended by actual harm; when a paroxysm came on I omitted the quinine with beneficial effect; until there was a good action of the abdominal organs, the quinine was worse than useless. I found small emulgent doses of mercury with sodorifics, diaphoretics, and aloetic purgatives most useful. While the adynæmia was combated by the constant exhibition of wine, brandy, æther, ammonia, beef tea, &c., &c., and hot bottles to the feet;—special symptoms were met by special remedies."

Surgeon Rutherford, H. M. 18th Hussars, writing of the 18th Hussars, who are located on the south-west of the Ulsoor Lake and his hospital due south of the lake, says that "the treatment adopted in all cases has been the free use of stimulants in the form of brandy, portwine, and occasionally bottled porter; light nourishing food as beef tea and strong chicken broth. The sesqui-carbonate of ammonia, occasionally combined with disulphate of quinine in bitter infusion, has invariably been given, and the system generally supported in every way." "Nape of the neck has been freely blistered, and the raw surface sprinkled with quinine."

Assistant Surgeon Henderson, M.D., H. M. 33rd Regiment, whose cases also chiefly came from near the market, has found that "the treatment of this fever requires the very greatest care and attention, as might be supposed when the cause is somewhat obscure and when the stomach is so irritable and so little tolerant of medicine or food, moderation in the use of remedies, constant watchfulness and attention to local complications are peculiarly necessary. I have found that after clearing out the primæ viæ, a gentle stimulant and nourishing plan not proceeded in blindly, but with due and careful regard for the tolerance of the remedy or the nourishment, for the period and time of its administration, and for its effects, has succeeded best; the low state of the functions of digestion and assimulation require to be kept in mind as well as the low state of the nervous

system and body generally. Quinine, so useful in all forms of fever, it is specially necessary to be careful about; its ill-timed or undue administration I have observed to do harm."

Assistant Surgeon W. Farquhar, M.D., Garrison Assistant Surgeon, thus remarks:—"Regarding treatment I should say that the most successful would be that in which each particular case was treated according to the ordinary principles of medicine: where necessary, removing obstructions in particular organs, combating the various symptoms as they arise, vigorously supporting the powers of life, and judiciously exhibiting quinine in quantities varying with noted periodicity in all cases in which there is no known contra-indication to its use."

The native sick treated in the hospital of the Sappers and Miners, and many of those in the Cantonment Civil Hospital were from near neighbourhoods, and it will be observed that their Medical Officers found it necessary to be watchful in administering quinine.

7. I have been of opinion that this fever has been caused by impurities in the drinking water of the community. But, as will be observed by the reports, the Medical Officers who have given their views have attributed its origin to more than one cause, and as this is a point of much importance connected with the sanitary condition of this city, I place their remarks in notes below.*

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* *Surgeon Major M. Rogers, Garrison Surgeon.*—"The admission into the Garrison Hospital of patients suffering with this disease have been from amongst the dhooly bearers, bullock drivers, &c., who reside in low crowded localities. Some of these came from the neighbourhood of the market, near the open drain which carries off the sewage from the Infantry lines and bazaars."

Brevet Surgeon T. Lowe, Sappers and Miners.—"The site of the Sapper camp is the worst in Bangalore. In either monsoon it is to leeward of immense foci of disease, bazaars, crowded dwellings and square miles of filthy houses, huts and cesspools on one side, and the other drying borders of a huge surface tank; added to this the water of many wells is simply filth. I have examined many specimens with a powerful microscope, and I may state that it is universally unfit for drinking purposes as procured from the wells and tanks, and carried in mussucks. It will be seen that we have earth, air, and water against us,—a combination sufficient to originate and perpetuate any amount of endemic or epidemic disease."

Surgeon Rutherford, H. M. 18th Hussars.—"In no single instance has a patient, on admission to hospital, presented the slightest appearance of this disease, and it has invariably supervened on some other disease as diarrhœa, dysentery, bronchitis, or simple continued fever." * * * "With regard to the hospital, the situation is bad, being considerably lower than the road; the compound is crossed at right angles by a large main sewer which leads direct from the barracks, and conveys all the sewage from thence. In ad-

The town is undoubtedly overcrowded, and overcrowding is ever a cause of fevers of a severe form; but it is to the impure drinking water of this community that I would point as the cause of this disease. Near the Market, in Choolay, amongst the huts of the Artillery followers, near the North-east corner of the old Race Ground, and, latterly, the huts on the west of the Protestant Burial Ground, have been the sites in which the prevalence of this fever has been chiefly noticed. There have been but two cases in the 33rd Regiment Madras Native Infantry, none in the 22nd Regiment Madras Native Infantry, and only one case in Her Majesty's 2-10th Regiment. The ailment has been occurring here since January, though the cases were not at first connected as a series; but it seems to have occurred in its greatest severity amongst the Artillery followers, in the huts near the North-east corner of the old Race Ground, appearing there about the months of March or April, between which time and the beginning of August, 106 deaths are reported to have taken place. The mortality seems to have impressed these people with the belief that the disease was contagious, and there has been reported to have been an unwillingness to attend on the sick. There is no doubt that it would be very undesirable to accumulate in one spot any large number of these cases of fever. Alike as the most advisable mode of treating the sick of the Royal Artillery followers, and to remove them from the vicinity of the European troops, tents were pitched for them at a distance, and about

dition to this there are several minor drains, which convey sewage from the hospital and empty themselves into the main drain." * * "And I am only able to speak with regard to the unpleasant emanations which arise therefrom, and is the only cause to which I can attribute the frequent occurrence of typhoid fever in this hospital."

Assistant Surgeon W. Farquhar, M.D., *Garrison Assistant Surgeon.*—"I deem it a matter for consideration whether this fever is one *sui generis*, produced by some yet unknown cause; or whether certain atmospheric influences added to conditions affecting localities and individuals, and all acting simultaneously (though always in some degree existing separately) may not have simply modified the better known forms of malarious fever, all of which are liable to occasionally become more or less epidemic."

Assistant Surgeon Henderson, M.D., *33rd Regiment N. I.*—"As to the causes of this fever, it would appear, at first sight, to depend upon or proceed from want of food, or clothes, or shelter, or cleanliness, or air, or other necessary of life; but, on closer observation, it can scarcely be attributed to privation alone, as it has occurred among a population who are not starving or in very impoverished circumstances, and there has been no want of remunerative labor here of late. That it is due to improper diet and to imperfect sanitary conditions I have no doubt."

80 cases have been under treatment in the tents since the beginning of August, frequently shifting the tents, and affording to the sick the freest accession of fresh air.

Latterly, there have been cases admitted from the followers of the A. Battery 14th Brigade and on the South-west of the old Race Ground; but whether these people were amongst the number who were removed from the North-east huts has not been traced. During the month of September, the cases which occurred have been less severe. The character of this epidemic fever has been such as to give rise to the question whether it may not find a permanent place in this city; and it has seemed advisable to submit to the Municipal Board several suggestions, connected with their sanitary care of the town in the matter of supplies of water, food, and pure air, and I attach,* for information, a copy of that communication, as also copies of the previous letters to which it alludes.

8. There is a fact which strongly supports the view taken by others as to this fever having been of atmospheric origin. It is, that all the ailments occurring in general practice have been of an adynamic type. And, though this militates against the opinion which I have formed, I mention it as a point of importance to be known in endeavouring to trace the cause of this epidemic.

The principal source of water-supply for the Artillery followers was a well (there were others near) underneath the North-east Cess Cistern, regarding which the G. O. No. dated has been issued. It was considered the best water of the neighbourhood, and was largely used by the followers, a great portion of whom have fallen ill and many died. The other wells in this city, from which all the poor and many of the well-to-do people obtain their drinking water, urgently need care.

9. As it will be observed that Brevet Surgeon Lowe notices the site of the Sapper camp as the worst in Bangalore, I may mention that the native soldiers of the Sapper Battalion have not yet erected their huts on the site made vacant for them, but have been occupying portions of the lines which, at the end of 1864, the 14th Regiment Native Infantry quitted; the European part of the Sappers only

* These letters point out several unsanitary conditions, and suggest remedies; but we see no reason to reproduce them here.—ED. *M. Q. J.*

being in the neighbourhood of the locality allotted for the new huts that are to be erected.

It will also be observed that Surgeon Rutherford attributes to the site of his hospital the occurrence of typhoid cases in it, and records his opinion that "the situation of it is not one conducive to the successful treatment of sick Europeans."

I have already, in my diary of 29th October 1864, placed before the Principal Inspector General the opinion which I had then formed regarding the sites occupied by the military in this city, and I noticed then how much they have been surrounded by the civil population. I have again this year been serving in this Division, and the opinion which I had formed in 1864 continues unchanged. Surgeon Rutherford has repeatedly mentioned to me that surgical cases treated in the more northerly men's building of his hospital have not done well, and, with a drain crossing its compound and the Ulsoor Tank on its north, I am of opinion that the site is not one on which a new hospital can be erected with any confidence as to its affording a pure atmosphere for the sick. On this point, my opinion as to the superior advantages of having the European sick treated in the old Race Ground Hospital were submitted to the Sanitary Commission when inspecting here in 1864. As regards the Sapper site, which is as yet unbuilt on by the native soldiers' huts, the opinion which I submitted in 1864 as to the military generally being over-hemmed in by the civil population is very applicable here.

I have the honor to be,

Sir,

Your most obedient servant,

(Signed) EDWARD BALFOUR,

Deputy Inspector General,

Acting Deputy Inspector General,

of Hospitals, Hyd. Subsy. Force.

ART. XI.—*Annual Report of the Engineer Establishment, Upper Godavery, for the year* 1865. **By Assistant Surgeon J. M. HOUSTON, M.D., in Medical charge Upper Godavery Works.**

(Communicated by the Principal Inspector General, Medical Department.)

THIS station has been described in my annual reports for 1861 and 1862, and there is little now to say about it. On the further side of the canal under construction, about half a mile or rather more from the bazaar, four good lines have been erected, each 144 feet in length and 18 feet in width, and divided into compartments 9 feet × 9 feet. These lines are 170 feet apart, and their situation is high and good, but they are half a mile distant from the river, whence only water can be procured, and the locality is too much surrounded by jungle. On this side of the canal, and close to the river and bazaar, there are now eight lines from 100 to 154 feet long and 18 feet wide, divided into compartments 9 feet square; the lines are from 120 to 150 feet apart. The ground on which they are built, like the bazaar itself, is decidedly low, and was under water during the heavy freshes of 1861 and 1863. Four of the lines are very bad and will doubtless soon be removed, the other four are new and good. During the hot weather, cholera prevailed greatly in these lines and in the bazaar, and three very old lines, in which the people insisted on remaining, were destroyed, to check, in some degree, the spread of the disease. The bazaar itself contains about eight short straight streets of varying but considerable width, and running north and south. On the highest part of the river bank, are the writers' houses, running in two or three streets, which are pretty wide and straight. At each end, however, of this part of the station, there has always been a tendency to run up small huts out of all line. Major Haig did everything to put this system down that he could, without interfering with private property, and, since the hot weather of 1864, these situations have been less crowded and offensive, but they have never been healthy, and the cholera committed more ravages there than elsewhere.

On the Lunka, which is high and never under water, there are twelve lines. Two of these are 300 feet long and 20 feet wide; the rest are of the same width, but only 150 feet in length. They are all divided into compartments about 10

feet square, and the lines are 90 feet, at least, apart. Sometimes the coolies decline to live in the lines, and put up, chiefly in the hot weather, temporary huts near their work and near the river. They are apt to run away in hundreds if they are interfered with, so these temporary villages have always been tolerated, though they are always in a filthy state. There are usually two of these encampments on the Lunka, but at this moment there is only one, which contains 80 huts. At the Lime-kiln, which is more than a mile from the bazaar, and higher up the stream, there are four lines; one is 200 feet long, and the others 100; they are all 18 feet wide, and are divided into compartments about 9 feet square. As on the Lunka, these lines are 90 feet apart. Here, also, there is an encampment containing forty huts.

Between the bazaar and the Lime-kiln, but nearest the former, are the workshop lines, built in two regular streets and containing twenty-four houses, but the situation is low and the locality very close to swamp and jungle. The great majority of the people employed in the workshop, however, live close to the writers' lines in Doomagoodiem village. Near the workshop, but on the outside of the flood embankment, is MacLaren's Village, which has existed for two or three years, and is composed of about one hundred and ten huts of all possible sizes and shapes, built on each side of the cart track or road. The jungle is quite close to this encampment. All the huts in it are, of course, the property of those who inhabit them, but this encampment is kept pretty much as Mr. Van Stanern, the Workshop Superintendent, chooses. With the exception of a single well at the workshop, water is got only from the river or the branch of it called the channel, which leaves the river two miles above the station, and, after forming the Lunka already mentioned, re-joins the main stream between the workshop and the writers' lines.

The only out-station of importance now occupied is Gungole, between two and three miles from here. It was occupied in 1862 when the tramway was under construction, but has not been much used since, and the old lines have long ago fallen to pieces. Some new lines were, however, constructed there in 1864, and occasionally occupied by small parties, but it was not till the middle of October 1865, that it became of importance. In that month orders arrived to stop all the works below Gungole, and to make that neighbourhood the site of the Tail Locks, and about 1,000 men were immediately transferred from Penapilly, Gollagoodiem and the other stations of the 3rd Sub-Division, and took up their

residence in the Gungole lines, or encamped under trees, or threw up temporary sheds in that situation. There are now seven lines at Gungole, two of which are roofed with corrugated iron. One of the latter is 200 feet long and 24 feet wide, and the other is 15 feet wide and 140 feet long; the compartments of each are 12 feet by 8 feet. The other five lines are each 144 feet long by 19 feet wide; the roof is thatched, and the compartments are nine feet square. The situation is good, but there is too much jungle and the lines are too far from the river, *i. e.*, more than half a mile, but putting them on the river bank, which is here rather low, would be a source of danger during every high fresh. Here, too, the coolies take things in their own hands greatly, and form little encampments of their own near the river. Of the other out-stations I shall say something when I come to the details of the cholera epidemic.

A considerable establishment has been kept up during the year to keep the village, &c., clean; for Doomagoodiem 9 sweepers, 5 toties, 2 bandies and 1 puckali; for the Workshop and MacLaren's Village 1 peon and 4 sweepers; for the Lunka 2 peons, 5 sweepers, 1 toty, and 1 bandy; and for the Lime-kiln, 1 peon, 2 sweepers and 1 toty. There are 14 movable privies in use. These consist of a wooden platform mounted on wheels, placed over a narrow, deep pit. To the platform a frame-work is nailed, and this frame is covered with mats or cloth, so as to conceal the persons using the privy. Three or four holes are cut in the floor, and the sweepers throw earth through these holes into the pit below once a day or oftener; and they wash the floor or platform as often as appears necessary. The plan works well with care, but it breaks down in an epidemic, because the sweepers are panic-stricken, like the rest, after the first day or two. These privies are kept pretty near the streets and lines. To remove them to any distance would defeat their object, and the streets and drains would suffer. The great majority of persons in health don't use the privies but go into the jungle.

The climate is cold for three months, viz., November, December, and January; very hot in April, May, and June; and moderately hot all the rest of the year. The rainfall, for the four months of the monsoon, was only this year about 31 inches, but it is usually somewhat more, *i. e.*, from 36 to 40 inches. It was distributed as follows: June 4·6, July 5·7, August 11·6, September 9·2. There were severe windstorms during the hot weather, but hardly any rain till

about April 20th, when several thunderstorms, with some rain, occurred. The navigation did not commence till 2nd July, which is 10 or 15 days later than the usual time. On the 11th June the thermometer was 101°; I doubt whether it was ever higher, but during most of May and June, it stood during the afternoon at about 95°.

II.—The hospital was built in 1861, and was fully described in my report for that year. Some improvements were made in 1864, and noted in last annual report; on the Lunka, however, a nice new hospital has re-placed the shed formerly in use. It occupies a high situation, about a mile from Doomagoodiem Hospital, on the Lunka bank of the channel, and is sufficiently removed from the Coolie lines. It is a thatched building of sun dried brick, and contains a ward 53 feet long by 16 feet wide. The walls are fourteen feet high, and on each side there are four doors but no windows. Round the building there is a verandah 8 feet wide. At the ends the verandahs have been built in so as to form two side rooms each 17 feet by 7 feet, and not communicating with the main ward. One of these has been fitted up as a surgery; the other is chiefly used for obstetric or puerperal cases. At Gungole, an old house, formerly occupied by a Supervisor, is in use as a hospital. It would be well enough suited for the purpose if it were more central in position and in proper repair. The hospitals at Doomagoodiem and on the Lunka are always full of in-patients; but, at Gongole, there are seldom more than one or two in-patients; the coolies there won't, as a rule, remain in hospital, and if any force is employed, they won't even become out-patients. When all the doors are open the Lunka Ward accommodates ten patients. If some of the doors are shut, room can be made for two or three more.

III.—The employment mainly consists of earthwork, *i. e.* digging canal and making embankments, and of masonry and quarrying for the anicut, sluice wall, and lock; there is also, of course, a little wood and iron work done at the workshop. Work is carried on usually from 6. A. M. till noon, and from 2 to 6 P. M. In the hot weather the hours are shorter. Most of the work, however, is now done by contract, and those who work on these terms are, of course, allowed to choose their own hours, when the work is not of such a nature as to require close supervision.

IV.—During the first half of the year the European strength was at least 25, but, when Government determined not to go on with the second barrier, and to confine the

works on this barrier to two or three miles, considerable reductions took place as less supervision was required. The European strength is now about 15. One death took place among the Europeans during the year.

The monthly approximate native strength is thus shown :—

MONTHS.	Head Quarters.	Out-stations.	TOTAL.
January...	3,580	928	4,508
February	4,224	1,295	5,519
March	4,917	1,821	6,738
April...	1,877	500	2,377
May	1,811	1,250	3,061
June...	1,847	1,228	3,075
July	1,207	556	1,763
August	904	1,420	2,324
September.	494	546	1,040
October	2,610	0	2,610
November	4,179	0	4,179
December...	3,496	0	3,496

The Monthly Admissions and Deaths from all diseases have been :—

MONTHS.	Head Quarters.		Out-stations.		TOTAL.	
	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.
January...	473	8	151	1	624	9
February	524	7	149	1	673	8
March	900	11	160	1	1,060	12
April	904	215	219	25	1,123	240
May	302	34	121	7	423	41
June	311	6	110	0	421	6
July	228	5	109	1	337	6
August	170	1	78	0	248	1
September	175	0	124	0	299	0
October	221	1	65	0	286	1
November	372	2	234	1	606	3
December	397	2	181	1	578	3

Since October, with the exception of about 200 men, who were encamped for a few weeks on the opposite side of the

anicut, to quarry stone and collect material, the only out-station has been Gungole, and, as many of the men employed in cutting the canal, between Doomagoodiem and Gungole, live at the former station, and are consequently treated at the General Hospital, while others, who live in the lines between Doomagoodiem and Gungole, are treated at either, it is difficult, now, to preserve the distinctions of "Head Quarter strength" and "Out-stations strength," as in former reports. Up to October, however, the distinction was easy, as the out-stations were at least ten miles removed from Doomagoodiem, and formed a distinct sub-division, extending over 10 or 12 miles, under the supervision of Lieutenant Roberts, R. E.

V. Fever has always been a principal disease here, as is shown by the following table:

YEARS.	Approximate average strength.	Total admissions for Fever.	Deaths from Fever.
1861	750	1,305	8
1862	2,300	3,417	14
1863	3,400	6,070	40
1864	3,704	5,404	24
1865	3,391	3,929	21

In 1861 every person on the average was under treatment 1·7 times; in 1862, 1·5; in 1863, 1·8; in 1864, 1·5; and in 1865, 1·2. The proportion of deaths to admissions was, in 1861, one in 163; in 1862, one in 244; in 1863, one in 151; in 1864, one in 225, and in 1865, one in 187; and the proportion of deaths to approximate average strength was one in $93\frac{3}{4}$ in 1861; one in $164\frac{2}{7}$ in 1862; one in 85 in 1863; one in $225\frac{1}{6}$ in 1864, and in 1865 one in $162\frac{1}{2}$.

The following table will show the Monthly statistics of Fever for the last three years:

Months.	1863.			1864.			1865.		
	Strength.	Admissions.	Deaths.	Strength.	Admissions.	Deaths.	Strength.	Admissions.	Deaths.
January.........	3,400	444	3	3,787	524	2	4,508	443	4
February.........	3,400	343	1	4,130	353	2	5,519	499	2
March.............	3,400	545	6	4,632	668	4	6,738	830	6
April.............	3,400	673	12	3,692	463	0	2,377	391	3
May...............	4,000	274	8	3,373	256	1	3,061	190	1
June..............	3,633	165	1	2,807	327	2	3,075	225	1
July..............	3,627	221	0	2,706	253	2	1,763	162	0
August............	3,351	315	1	2,892	318	2	2,324	105	0
September.......	3,000	500	0	3,336	351	1	1,040	134	0
October...........	2,800	792	2	3,962	458	1	2,610	143	0
November.......	3,000	915	2	4,513	804	3	4,179	411	2
December.........	3,877	883	4	4,678	632	4	3,496	396	2

The proportion of Febrile attacks to strength and of deaths to admissions were in each month:—

Months.	1863.		1864.		1865.	
	Admissions to Strength.	Deaths to Admissions.	Admissions to Strength.	Deaths to Admissions.	Admissions to Strength.	Deaths to Admissions.
January......	1 in 7·7	1 in 146	1 in 7·2	1 in 262	1 in 10·2	1 in 111
February....	1 in 9·9	1 in 343	1 in 11·7	1 in 171	1 in 11·1	1 in 250
March........	1 in 6·2	1 in 91	1 in 6·9	1 in 167	1 in 8·1	1 in 138
April..........	1 in 5	1 in 64	1 in 7·4	,,	1 in 6·1	1 in 130
May...........	1 in 14·6	1 in 34	1 in 13	1 in 256	1 in 16·1	1 in 190
June..........	1 in 22	1 in 165	1 in 8·6	1 in 168	1 in 13·7	1 in 225
July...........	1 in 16·4	,,	1 in 10·7	1 in 126	1 in 10·9	,,
August.......	1 in 10·9	1 in 315	1 in 9	1 in 159	1 in 22·1	,,
September..	1 in 6	,,	1 in 9·5	1 in 351	1 in 7·8	,,
October......	1 in 3·5	1 in 396	1 in 8·7	1 in 455	1 in 18·2	,,
November...	1 in 3·3	1 in 457	1 in 5 6	1 in 268	1 in 10·2	1 in 206
December...	1 in 4·3	1 in 221	1 in 7·4	1 in 158	1 in 8·8	1 in 198

The monsoon months are the most healthy, as a rule, and the cold weather months the least so. March and April, however, would appear from the table to be very feverish, much more so than May and June, in which the heat is even more intense. I suppose a good effect is produced by the storms which are occasional between 20th April and 15th June, and frequent afterwards, as the monsoon bursts. A little rain sometimes falls in November, but none between that period and April 20th.

The remittent form of fever was frequent in the hot weather of 1863, but not since, and such cases as have occurred were, most likely, neglected cases of the intermittent type. People, even Europeans, who have been a long time in the district, seldom having ague or well-marked paroxysms of fever, don't pay much attention to the badly marked intermittents from which they occasionally suffer. If they have quinine by them they take a dose or two, or, perhaps, if it is convenient, or the fever returns for two or three days in succession, they will call at the hospital, or send for a few doses of quinine. If these individuals are exposed to the sun and have constipated bowels, they are apt to be attacked with fever rather of the remittent type and attended with troublesome head symptoms, but the fever was originally intermittent, and could easily have been arrested by proper treatment. Of this nature, most probably, many of the cases are that are brought comatose to hospital, and regarding which it is almost always impossible to obtain detailed information. Sometimes the patient is represented to have been in his ordinary health, till a few minutes before the coma set in, but often the friends will state that he had suffered, for days, from a fever so slight as not to have been considered worthy of notice, and that he had not taken any regular meals during that period. That sudden coma does set in without very marked symptoms preceding it, and that this coma is caused by malarious poison, I do not doubt. I have observed, too, during this cold weather, a strong tendency to pneumonia, bronchitis and pleurisy, and that the two former of these diseases were so marked by the intermittent character of the fever which preceded or accompanied them, that there was much risk of their being overlooked entirely. I think fever has been, perhaps, less complicated with bilious vomiting than in former years. This used to be a frequent symptom with Europeans lately arrived in the district, but I seldom see such cases now.

In fact, nearly all the Europeans have been here for some years, and, though their constitutions cannot but have to some extent deteriorated, they don't often get fever at all, and those who are attacked, seldom have ague, or any well marked stages of the intermittent. The jungle has, of course, greatly disappeared in the five years we have been encamped here, but I cannot doubt that we owe our immunity from fever greatly to acclimatization. The Kois, who live in the jungles here, are usually all attacked once a year with fever, and about one per cent. die; so far as I can learn they use no treatment, but merely practice the strictest abstinence while under the attack. They will take quinine readily if it is offered to them, but I don't think they would come here to ask for it, unless told to do so, however long they might suffer. If persons unaccustomed to a malarious atmosphere were to treat their fevers in this way, the proportion of deaths would be very large, perhaps 30 per cent., for the paroxysm would certainly return with undiminished force for several days in succession, and every paroxysm would produce more or less deterioration of the system, even in those who made, apparently, excellent eventual recoveries. It is certain that many of the fatal cases among the coolies, that are recorded under other readings, are due to malaria, for, by repeated attacks of fever, even if these are slight and badly marked, the vital force is weakened, diseases of debility are developed, and the patients die with passive dropsy, chronic diarrhœa, &c.

I have not used any treatment this year for fever but quinine, preceded or accompanied, when desirable, with sulphate of magnesia or other saline purgatives. Occasionally a dose or two of calomel and ipecacuanha have been given, but quinine has been the only essential part of the treatment. When patients have become very weak, carbonate of ammonia and carbonate of soda are given along with the quinine, and pains are taken, so long as the patient can swallow, to give broth, or other nourishing fluids, every four or five hours. If any symptoms of coma show themselves, mustard plasters are ordered, or the liquor mylabris is freely applied to the nape of the neck, and the hair is cut short or shaved. I have given enemata of animal broth to patients who were unable to swallow, but I have not observed any good result from this practice. Wine, arrack, and brandy are often given, in cases of coma, by the mouth, if the coma is not so deep as to render the administration of fluids dan-

gerous. Most fever patients give very little trouble, however. They are out-patients and have no complications. They come once, sometimes twice a day, to hospital for three days, and take 4 or 5 gr. of quinine, with or without a purgative, and, on the fourth or fifth day, they return to duty. If the patient is a female, or old and weak, the return to duty is, perhaps, delayed for a day or two longer, to enable them to recover strength. Occasionally too, debility supervenes so immediately on the cure of the fever that the patient has to remain on the sick report for ten days or more, from inability to go to duty at an earlier period ; and some persons never recover their strength at all, without leaving the district, though they may never have had a single paroxysm of fever that gave any uneasiness.

Dysentery.

The extent to which Dysentery has prevailed is shown thus :—

Years.	Approximate strength.	Cases treated.	Deaths.
1861	750	68	2
1862	2,300	80	10
1863	3,400	203	15
1864	3,704	148	9
1865	3,391	113	7

That is to say, in 1861, one in 34 of those treated died ; in 1862, one in 10 ; in 1863, one in 13½ ; in 1864, one in 16⅓; and in 1865, one in 16 :—there were attacked, in proportion to approximate strength, in 1861, one in 11 ; in 1862, one in 28¾ ; in 1863, one in 16½ ; in 1864, one in 25 ; and in 1865, one in 30 :—and there died, in proportion to approximate strength, in 1861, one in 375 ; in 1862, one in 230 ; in 1863, one in 226⅓ ; in 1864, one in 411½ ; and in 1865, one in 484⅓.

The following table shows the monthly statistics :—*

MONTHS.	1863.			1864.			1865.		
	Strength.	Admissions for Dysentery.	Deaths.	Strength.	Admissions for Dysentery.	Deaths.	Strength.	Admissions for Dysentery.	Deaths.
January......	3,400	19	0	3,787	32	0	4,508	10	1
February....	3,400	18	0	4,130	16	0	5,519	10	0
March.........	3,400	13	1	4,632	32	0	6,738	12	3
April.........	3,400	22	0	3,692	12	0	2,377	11	1
May..........	4,000	14	1	3,373	4	0	3,061	12	1
June..........	3,633	10	3	2,807	3	0	3,075	9	0
July..........	3,627	9	3	2,706	3	0	1,763	7	1
August......	3,361	9	1	2,892	12	0	2,324	9	0
September...	3,000	15	0	3,336	4	0	1,040	2	0
October......	2,800	25	1	3,962	10	0	2,610	4	0
November...	3,000	15	2	4,513	11	0	4,179	14	0
December...	3,877	34	3	4,675	9	0	3,496	13	0

The cold weather is, in the main, the period during which this disease prevails. The disease is almost always of a chronic kind, and the patient is very often in an anemic state from fever or bad food. It appears to me that many cases of subacute dysentery are much benefited by Ipecacuanha, given in doses of grains 10, two or three times a day for the first two days after admission, and that this treatment should be preceded by a dose of opium. It seldom appears to produce vomiting in natives, and, often, it produces, in a few hours, a marked change in the evacuations. If ulceration has occurred it would, probably, be best not to give such large quantities of the Ipecacuanha, or to trust entirely to astringent medicines. I have a very bad opinion of the use of mercury, in any form or at any stage, in the class of cases

* We print this table as it stands in the M.S., but there is some error in the column of deaths for 1864, as it is shown in the previous table that, 9 deaths occurred in that year.—ED. *M. Q. J.*

that present themselves here. Quinine in small doses is much more useful; if Ipecacuanha fails, pills of morphia and nitrate of silver have, occasionally, seemed to check purging, over which other medicines had no control. I have now a much worse opinion of the use of mercury than I had in former years, and, even when the patient is debilitated, if the case is at all recent, I would, under most circumstances, give him carefully half scruple doses of Ipecacuanha, each dose preceded by opium, for, I think, the risk of doing so is less than that which is incurred by allowing the disease to run on to ulceration, as may happen, while other medicines, less violent but also less able to arrest the disease, are being tried. Of course, in all cases, if a careful watch is not maintained over the diet, treatment will too often fail. The desire to eat solid food, such as rice with curry, is exceedingly great with native sick who are beginning to recover, and they object greatly to be kept on spoon diet. I lately saw a sick child, who was, I was assured, taking only sago and milk, vomit a quantity of rice, &c. The child was really very ill, and the father was an educated native and most anxious about it, and yet he permitted my directions regarding diet to be disregarded.

Diarrhœa.

The statistics of Diarrhœa are thus shown:—

Years.	Approximate strength.	Cases treated.	Deaths.
1861..........	750	31	1
1862..........	2,300	36	4
1863..........	3,400	78	13
1864..........	3,704	22	3
1865..........	3,391	40	2

In 1861, therefore, out of 31 treated, one died; in 1862, one in 9; in 1863, one in 6; in 1864, one in 7⅓; and in 1865, one in 20:—in proportion to approximate strength there were attacked—in 1861, onein 24; in 1862, one in 63; in 1863, one in 44; in 1864, one in 168, and in 1865, one in 85:—and there died, in 1861, one in 750; in 1862, one in 575; in 1863, one in 261½; in 1864, one in 1235; and in 1865, one in 1695½.

The monthly comparison for three years is as follows:—

Months.	1863. Strength.	1863. Admissions.	1863. Deaths.	1864. Strength.	1864. Admissions.	1864. Deaths.	1865. Strength.	1865. Admissions.	1865. Deaths.
January	3,400	9	0	3,787	4	1	4,508	0	0
February	3,400	8	0	4,130	1	0	5,519	2	0
March	3,400	18	3	4,632	1	0	6,738	5	0
April	3,400	9	2	3,692	1	0	2,377	5	1
May	4,000	7	2	3,373	1	0	3,061	8	1
June	3,633	6	2	2,807	0	0	3,075	4	0
July	3,627	4	1	2,706	3	0	1,763	6	0
August	3,361	2	1	2,892	0	1	2,324	3	0
September	3,000	7	2	3,336	5	1	1,040	0	0
October	2,800	3	0	3,962	1	0	2,610	1	0
November	3,000	0	0	4,513	3	0	4,179	4	0
December	3,877	5	0	4,675	2	0	3,496	2	0

It must be understood that all these cases were severe in themselves, or so complicated with other diseases or states of the constitution, that they required careful treatment. For a slight attack of diarrhœa a robust native will not often apply for treatment, and, if he did, he would merely take a dose of medicine and go to his work, his name not appearing in the returns. It is usually with old anemic individuals, wasted by fever and insufficient food, that we have had to deal, the diarrhœa being merely the symptom most marked, and most immediately threatening to life. Of course here, as in dysentery, one of the chief difficulties is the regulation and control over the diet. Many of these cases have a dysenteric tendency, and, in these, I find Ipecacuanha useful in 10-grain doses; indeed, if the patient is at all robust, it appears to me that this remedy is always valuable, if accompanied or preceded by opium, and if the patient will keep in the recumbent position. I find tonic medicines, alternated with chalk, laudanum, and catechu or kinu, to act well with the old and weak. In fact, the points aimed at are to check the diarrhœa by astringent and other medicines, to

revent the patient from using unsuitable diet, and to remove y tonics, &c., the state of system which, at least, predisposes o the disease. I often fail in the latter object; though the atient, generally, gets well for the time, he too often has return of the disease, complicated, perhaps, with fever, ronchitis, or dropsy, and he sinks sooner or later.

Rheumatism.

The statistics of Rheumatism are thus shown :—

Years.	Approximate average strength.	Admissions.	Deaths.
1861	750	30	1
1862	2,300	98	0
1863	3,400	146	1
1864	3,704	81	4
1865	3,391	131	3

Of those treated in 1861, one in 30 died; in 1863, one in 146; in 1864, one in 20; and in 1865, one in 44. There were attacked, in proportion to strength, in 1861, one in 25; in 1862, one in 23; in 1863, one in 23; in 1864, one in 46; and in 1865, one in 26; and there died, in 1861, one in 750; in 1863, one in 3,400; in 1864, one in 926; and in 1865, one in 1,130.

The monthly proportions for the last three years are:—

Months.	1863.			1864.			1865.		
	Strength.	Attacks.	Deaths.	Strength.	Attacks.	Deaths.	Strength.	Attacks.	Deaths.
January	3,400	15	0	3,787	21	2	4,508	11	1
February	3,400	13	0	4,130	7	0	5,519	7	0
March	3,400	15	0	4,632	8	0	6,738	10	0
April	3,400	18	0	3,692	5	0	2,377	8	0
May	4,000	13	0	3,373	5	0	3,061	10	0
June	3,633	11	0	2,807	4	0	3,075	16	1
July	3,627	18	0	2,706	2	0	1,763	10	0
August	3,351	16	0	2,892	4	1	2,324	5	0
September	3,000	2	0	3,336	7	0	1,040	12	0
October	2,800	7	0	3,962	5	0	2,610	10	1
November	3,000	11	0	4,513	11	0	4,179	18	0
December	3,877	17	1	4,678	2	1	3,496	14	0

The disease prevailed chiefly during the cold months in 1863; in 1864 and 1865 the attacks appear to have been pretty equally divided. Though one would expect rheumatism to prevail chiefly in the cold or rainy seasons, it must be borne in mind, that during the hot months, hundreds of natives, and even some Europeans, sleep outside. I don't mean in verandahs and such places, but under the open sky. The great cold in November, December, and January makes it agreeable and even necessary for all to sleep with closed doors, and, on account of rain, all sleep under roofs of some kind in July, August, and September, and during parts of other months. The cases that came under my notice were mostly of a sub-acute character, affecting the joints in slow successions, and not generally accompanied by any severe febrile symptoms. One or two cases of severe rheumatic fever occurred; one in particular at the Lunka Hospital, I remember, was about as severe as any case I have seen in Europe, though the patient eventually recovered, without any cardiac symptoms that I could detect. I think the application of blisters or mustard poultices to the joints most useful if only one or two joints are attacked at one time, and if there is no intense pain or fever. To these cases, too, the Iodide of Potassium treatment appears applicable. In the more acute varieties, and where many joints are affected, I would prefer warm turpentine applications, and the administration of salines, in combination with colchicum wine and laudanum. In almost all kinds Dover's powder in a full dose at bed-time, combined with nitrate of potash, is useful. I don't think I would give mercury in any form, unless I were satisfied that cardiac affection was imminently to be apprehended.

ANASARCA,

The admissions and deaths are shown as follows:—

YEARS.	Approximate strength.	Admissions.	Deaths.
1861	750	20	3
1862	2,303	26	3
1863	3,400	87	16
1864	3,704	105	25
1865	3,391	33	11

In other words, in 1861—one in 6·7 of those attacked died; in 1862, one in 8·7; in 1863, one in 5·4; in 1864, one in 4·2; and in 1865, one in 3. The proportion of admissions to strength is—in 1861, one in 37·5; in 1862, one in 88·5; in 1863, one in 39; in 1864, one in 35·3; and in 1865, one in 102·8; and the proportion of deaths in 1861, one in 250; in 1862 one in 766·7; in 1863, one in 212·5; in 1864, one in 148·2; and in 1865, one in 308·3.

The next table shows the monthly statistics for the last three years:—

Months.	1863.			1864.			1865.		
	Strength.	Attacks.	Deaths.	Strength.	Attacks.	Deaths.	Strength.	Attacks.	Deaths.
January	3,400	8	1	3,787	38	7	4,508	4	2
February	3,400	11	1	4,130	14	2	5,519	4	4
March	3,400	10	2	4,632	6	2	6,738	5	2
April	3,400	8	3	3,692	9	4	2,377	5	0
May	4,000	6	2	3,373	4	1	3,061	1	0
June	3,633	6	1	2,807	1	2	3,075	4	1
July	3,627	5	0	2,706	4	2	1,763	5	0
August	3,351	3	1	2,892	7	2	2,324	2	0
September	3,000	7	1	3,336	0	0	1,040	0	0
October	2,800	4	1	3,962	3	2	2,610	0	0
November	3,000	5	2	4,513	8	1	4,179	0	0
December	3,877	14	1	4,678	11	0	3,496	3	2

With the exception of cholera, this is, perhaps, the disease least under the influence of medicine, that is met with in ordinary practice. It is almost always, as met with here, the result of extreme weakness and deterioration; indeed, it is, in most instances, rather a symptom of atrophy than a separate affection. The rate of mortality is excessive, and seems to become more so year after year. Albumen is hardly ever found in the urine, and there seems, in few instances, any ground to believe that any one organ is seriously or specially affected. The patient eats and sleeps, and usually complains of nothing but want of strength. Gradually the swelling increases, and his breathing becomes slowly affected; by and by it becomes necessary to use purgatives for the removal of the fluid, and the strength decreases while the fluid is rapidly re-accumulated; and at length, it may be in days, or weeks, or months, the patient dies from effusion into the cellular tissue of the lungs. All these patients are treated carefully with tonics, stimulants and diuretics, and attention is paid to their food and to their being kept warm at night; but, as the return shows, not with much success. It is probable, too, that some of those who recover so as to leave hospital will have a return of the disease if they do not speedily return to their native villages. No doubt, in most instances, the weakness and the deteriorated state of the blood to which the dropsy is due were themselves produced by malarious action, bad food, intemperance, and insufficient clothing. No case of dropsy has occurred among the Europeans, who have good clothing and food, and who, if not free from intemperance, are not in the way of using the vile Hippoo spirit so lavishly sold almost in the coolie lines.

Bronchitis.

The following table will show the extent to which this disease has prevailed:—

Years.	Approximate average strength.	No. attacked.	Died.
1861........	750	54	0
1862........	2,300	12	0
1863........	3,400	44	0
1864....	3,704	31	2
1865........	3,391	38	0

That is to say, in 1861, one in 13·9 were attacked; in 1862, one in 191·7; in 1863, one in 77·3; in 1864, one in 119·5; and in 1865, one in 89·2.

The monthly statistics for two years are thus shown:—

Months.	1864. Approximate strength.	1864. Attacks.	1864. Deaths.	1865. Approximate strength.	1865. Attacks.	1865. Deaths.
January	3,787	12	0	4,508	1	0
February ...	4,130	3	1	5,519	4	0
March...	4,632	1	0	6,738	8	0
April	3,692	1	0	2,377	0	0
May	3,373	0	0	3,061	1	0
June	2,807	2	0	3,075	3	0
July	2,706	0	0	1,763	3	0
August	2,892	3	0	2,324	3	0
September	3,336	5	0	1,040	4	0
October	3,962	1	1	2,610	2	0
November	4,513	2	0	4,179	1	0
December ...	4,675	1	0	3,496	8	0

It is in the cold weather that this disease chiefly occurs, and after or during fever nearly always. All diseases must be registered under some one head; and, where more than one is present, the selection is often very arbitrary. It is probable, however, that the one whose symptoms were most threatening or most evident would be selected. There is nothing to say about the symptoms and treatment, which were of the ordinary nature.

There were two admissions for pneumonia, both of which died, and one admission for pleurisy. There were many

more pneumonic cases, but as they occurred with intermittent fever, or succeeded it, they were not separately registered.

ULCERS AND CONTUSIONS.

The admissions and deaths during three years are thus shown :—

YEARS.	Ulcers.		Contusions.	
	Admissions.	Deaths.	Admissions.	Deaths.
1863	308	6	463	4
1864...	285	5	608	2
1865	417	5	761	2

The distinction between ulcers and contusions is of no value here. If a patient is slightly injured and at once applies for treatment, no doubt he is correctly returned under the head of contusion. But should he, on the other hand, not apply for treatment, but go on with his work for days or weeks, till his contusion or wound becomes an ulcer, it is entirely doubtful under which heading he would be placed. With the exception of fever, this is the disease which disables the works most, and this year it seems to have been more frequent than ever. No doubt a number of persons suffering from ulceration before arrival, come on the works, and many more, though free from open sores on arrival, had the marks of old scars denoting a tendency to this affection, but the great majority suffer merely from the result of trivial neglected wounds received on the works. Their state of health is, no doubt, deteriorated by malaria, intemperance, and a food not containing a sufficient amount of succulent vegetable, and, in many instances, there is besides a scrofulous or syphilitic taint to be contended

against. The treatment consists of rest, when the patient will submit to it, of the usual local applications, poultices, ointments and plasters, and of constitutional treatment according to circumstances, lime juice, iodide of potassium, quinine and iron, stimulants, mercurials, &c.

Patients who are suffering from constitutional irritation, and who are in danger of their lives, often are offered the chances of amputation; but, as a rule, they won't hear of such a thing, and are apt to leave the hospital altogether, if it is at all insisted on. Two amputations took place during the year, one of the leg near the knee, for gangrene of the foot; the other of the forearm, about four inches above the wrist, for compound fracture of four metacarpal bones. The former died about 22 hours after the operation; the latter recovered. A case of strangulated hernia was reduced by taxis.

Obstetrics.—A case of arm presentation was successfully treated, as far as the mother was concerned, by turning; a case of breach-presentation also came under my care; and a woman, in a very exhausted state, was delivered by the forceps, but never rallied in the least after the operation. All the three children were born dead, and were of full maturity.

Cholera.—Cholera broke out in an epidemic form at Budrachellum, a Hindu village, on the right bank of the river, where there is a somewhat superior temple to which persons from different parts of the country resort, annually, for religious purposes. The town of Budrachellum is well built and in a high situation; its population is said to be 1,500. The annual festival began on April 3rd. The Rev. F. Alexander stated, in his report, that the crowd assembled was about 6,000; of these, about 4,000 were our work people. Drinking and tom-tom beating were kept up day and night, as usual, and the people only cooked once a day. No attempts were made to carry out sanitary arrangements, and a gentleman, who was present, informed me that an offensive smell became very marked at an early period. We had some coolie lines near the village, but as the portion of canal near Budrachellum was almost finished, only about 200 coolies lived in them at the time of the fair; there was also a Dresser there who had charge of the Budrachellum coolies and of those at Setarampoorum and Goondalla, three or four miles lower down. The coolies from all our stations went to the

fair; the writers, bazaarmen, &c. &c., from Doomagoodiem were there with their families. All were crowded together for three or four days and nights, on a space of a few yards near the booths, sleeping in their clothes on the bare ground, and most of them were exposed all day, without even the shelter of a tree, to the April sun. Many women, not usually seen in public at all, had to bear all this, and so had children. Besides, some women who had made vows lay down on the hot paving stones at the temple, for the whole or three-fourths of each day, without food and in the burning sun, their relatives occasionally pouring water over them to relieve their sufferings.

The first case of cholera appeared on the 5th April, and was promptly succeeded by three more, all of which seem to have died early. As soon as this became known, the people began to leave in great numbers; still a large crowd remained on the morning of the 6th, but towards the afternoon, this too disappeared. The cholera, however, continued among the coolies and the inhabitants of Budrachellum, and between the 5th and 9th, the Dresser, Sawmy Naidoo, treated 10 cases, half of which proved fatal. This, however, by no means represented the number attacked, as many died and recovered in the village, regarding whose attacks the Dresser was never able to obtain accurate information. He, however, knows that 50 were attacked there and that 20 died. Up to April 13th, the cases were very severe, collapse coming on very quickly.

The disease disappeared from Budrachellum before the middle of May, the Dresser having treated there 16 cases in hospital, of which 6 proved fatal. From Budrachellum the epidemic spread down the river to Setarampoorum and Goondalla; the former is two miles below Budrachellum, the latter four miles. The number of coolies at these places was about 600; among them 6 cases occurred. At Gollagoodiem, where we had 500 coolies living in lines, similar to those at Doomagoodiem, and in a few huts, 48 cases were treated between 13th April and 15th May by Dresser M. Rajahgopaul—of these 24 died. The following table, prepared by Dresser Rajahgopaul, will show the extent to which the villages on the river bank or near it below Budrachellum were injured. It must be understood that these villages are not occupied by our coolies, though the cooly lines were only a few hundred yards from some of them. This table applies

not to our lines, but to the villages and their inhabitants proper :—

Names of villages in order downwards from Budrachellum.	Distance from river bank.	Distance from Budrachellum	Attacked.	Died.	Remarks.
		Miles.			
Setarampoor.........	Close.	2	0	0	
Penapilly......	do.	4	1	1	No treatment.
Royenpetta...........	do.	5	1	1	Do.
Gollagoodiem...	do.	6	0	0	
Sondaram...	do.	$6\frac{1}{2}$	4	4	Do.
Nellypauk......... ...	$1\frac{1}{2}$ miles.	9	2	2	Do.
Davarapilly...	Close.	10	0	0	
Condapilly.............	3 miles.	6	2	0	Treated & cured.
Gollgoonda...	$2\frac{1}{2}$ miles.	$5\frac{1}{2}$	0	0	

The Dresser is of opinion that the disease was carried into these villages only by the pilgrims returning from Budrachellum, by the river bank, to Rajahmundry. Sondaram, he thinks, suffered most, because it is a large village where supplies can most easily be obtained, and it was therefore preferred as a halting place by the travellers. The Dresser would willingly have given medical assistance in all the villages where the disease showed itself, but the villagers were not desirous to have treatment, and therefore did not send for him.

The cholera appeared at Doomagoodiem on the night of the 7th. The first victim was a Brahmin woman. She was a stranger, and, after leaving Budrachellum, she went, with her relatives, through this station, to visit the temple at Paranasalla, 5 miles higher up the river, and was returning by the same route to her native place when she was attacked. She died in 20 hours, without any rally. The case was promptly succeeded by others, and by the 10th April 13 cases and 4 deaths had been recorded; by the 14th the number of attacks had increased to 109, and 57 deaths were reported; the people also began to leave in considerable numbers. I advised that the lines should be evacuated, and small camps formed in the jungle in the neighbourhood.

Some little delay occurred in carrying out my suggestion, partly, probably, from doubts entertained by the officers in authority as to its feasibility, but chiefly owing to the opposition of the coolies themselves, who at this time left off work entirely, and spent day and night in tom-toming about the streets, offering sacrifices, &c. On the 16th April 41 fresh cases were reported and 23 deaths occurred to my knowledge, but the officer who had charge of the burying parties informed me that 34 interments took place. The night previous to this 400 Northern Division men went away in a body. On April 17th, 400 men were induced to go into camp at Gungole, where there was then no establishment; they were given grass, &c., to hut themselves with, and they were also permitted, to some extent, to occupy empty lines there. They were supposed to leave their sick behind for treatment, but they undoubtedly carried away several of these with them into camp. Another camp formed itself on the other side of the canal, also towards Gungole, but much nearer to Doomagoodiem. The number in these camps gradually increased as the sickness disappeared from them, as persons who at first refused to leave Doomagoodiem then changed their minds and joined their friends in camp. Indeed, this desire to join their companions was a source of danger, as, days after the cholera had disappeared from the camps, there was much risk of a fresh outbreak, because persons from Doomagoodiem, hardly convalescent, were continually taken out there by their relations. Up to the forenoon of the 19th I had received information of 286 attacks and 152 deaths in Doomagoodiem; 40 of these died without treatment. This, of course, includes the Lunka and Lime-kiln, where the united strength was about 700, and where fifty-one cases had been treated, up to that period, with the loss of twenty-two, by Dresser M. Coopchundlal. The disease was at first very terrible on this side of the station, and struck down the peons connected with the hospital, and the men employed in removing the dead, in a most embarrassing way. It was reported from the various out-stations, up to the 23rd April, that eighty-four persons had been attacked, and that thirty-seven had died.

On the 25th April I reported sixteen cases and eight deaths among the coolies in camp towards Gungole, whose number was probably 600 at that time; and at Doomagoodiem the numbers recorded, up to that date, were—at-

tacked 493, died 250. The force of the disease now began to be greater on the Lunka and at the Lime-kiln than on this side of the station, and there was much talk of sending the Lunka and Lime-kiln people into camp. On the 29th this was carried out with regard to the Lime-kiln party, 250 going across the river and partly encamping under trees on the left bank, and partly occupying some ruined huts and lines opposite the anicut. Unfortunately, however, about fifty of the Lime-kiln coolies declined to cross the river, but went back into the jungle, some three miles to the Koi village of Nellypilly, where there was a large tank and many fine trees. Unfortunately, too, they carried one or two sick persons with them, and two days afterwards cholera attacked these Kois, who, by purposely keeping away from Doomagoodiem, had hitherto escaped the disease. Only nine cases occurred, however, and the coolies, after losing four or five of their number, shook off the disease also. I reported on May 4th, a total, up to that date, of 642 attacked, and 328 died; 93 of these had no treatment. At the out-stations, 113 cases had occurred and 50 had died. Of the 642 attacks mentioned above, 103 occurred on the Lunka, and there were also 53 fatal cases at that part of the station up to the 4th May.

About May 10th cholera disappeared almost entirely from the district, and the people gradually returned into the lines. Doomagoodiem—total admissions 665, deaths 334; out-stations—admissions 113, deaths 51.

At Yettapauka, two miles above Budrachellum, on the river bank, we had fifty coolies, all of whom escaped, but the villagers of Yettapauka, or persons resting there, were attacked to the number of six or seven, and there were three or four deaths. The population of that village is about 150. At Seetempett, also on the river bank, two miles further up, but not actually on any road, there is a population of about fifty, all of whom escaped. Tourbacca, on the tramway, and also close to the bandy road to Doomagoodiem, has a population of about 150; and fifty coolies or horse-keepers also lived there. Ten cases, three of which were fatal, are said to have occurred. Nursapore is on the bandy road, six miles from Doomagoodiem; there one fatal case is believed to have happened. The villagers at Gungole are supposed to have escaped, but Bavoorgala, close to the river, a mile and a half from Doomagoodiem, suffered early and severely. Out of a population of 100, twenty were attacked and ten died. At Paravasally,

six or seven miles above Doomagoodiem, from five to ten were attacked, and three or four died. The population is about 200. There is no particular road there, but, on account of its temple, many of the pilgrims from Budrachellum visit it annually before returning to their houses. The Koi village of Naddakudoo, situated on the tramway, eleven miles from Budrachellum, suffered very severely. The population is said to be 500. The disease appeared on April 15th and lasted for fifteen days, attacking fifteen and killing nine persons. This village is four miles from Doomagoodiem, from whence the disease was probably carried. Madapoor is two and a half miles from here, and has a population of seventy; there eight cases occurred, and two deaths. Casapatam has a population of sixty, and is three miles from Doomagoodiem. There four persons were attacked, and one died.

I have made enquiries of many persons, and I find it is universally believed that the cholera originated at Budrachellum during the fair, and that it was not conveyed there by any party of pilgrims from a previously infected spot. It is pretty certain that there was no cholera anywhere within sixty or seventy miles previous to the outbreak at Budrachellum, and, therefore, it is highly probable that the popular view is the correct one. The exposure, the drinking, the fatigue, the bad or unaccustomed food, the sleeping on the bare ground or moving about during all the night, the crowding of thousands together, and the want of sanitary arrangements generally, must have highly pre-disposed to the disease. Whether these causes are sufficient in themselves to excite the disease, I rather doubt. I imagine that contact with an affected person, directly or otherwise, would spread the disease among persons so pre-disposed, but if this actual contagion is wanting I think the exciting cause must be some peculiar and unusual state of the atmosphere. Cholera has been decidedly rare here; yet these Budrachellum feasts have always been held, and it is the experience of the Rev. F. Alexander that in former years, when there were no work-people here, the number of persons attending the festival was greater than in the year under review. In 1857 the disease broke out at Budrachellum during the annual fair, and three men died. Immediately on this the people dispersed, and nothing is known of its further course. Major Haig, R. E., was here in 1860, and I have heard him say that cholera showed itself among the few work-people then under his orders. I have enquired into the history of that outbreak, and I find that it

occurred after the Budrachellum feast, *i. e.*, in May, that twenty persons died in all on this barrier, and that the villages attacked were Budrachellum, Seetempett, Doomagoodiem, and Paravasalla. I have not been able to ascertain the number attacked, but I should imagine that, if twenty died, about an equal number must have been attacked and recovered. From May 1860 till April 1865, then, not a single case of cholera occurred within 30 miles of this station or of Budrachellum, though a feast, to which all our people went, and strangers from all parts came, was held annually, under precisely similar circumstances to that of 1865. Besides this, many thousand coolies from all parts of the country have joined the works at all seasons, in parties varying from 1,000 to 50, without ever bringing in the disease. The sanitary condition of Doomagoodiem has never been such, that, had the disease been brought in, it could have failed to spread. All that has been wanting, or that is now wanting, is the spark of contagion to light up the disease.

When I first heard of the outbreak, I sent a short Telugu paper of instructions along with medicines to such places as possessed a native of intelligence. The medicines were pills containing acetate of lead, camphor, and opium, and stoppered bottles containing a solution of carbonate of ammonia in spirits. The instructions were to give the pills every four hours when there was present purging and vomiting with heat of skin and only slight collapse, and to omit the pills entirely and give the solution when the patient became cold and collapsed. In all cases the sick person was to lie down and be covered up; he was also to have hot bottles or bricks placed near his body and was to take a little conjee every four hours or so. Cases were not, in the event of recovery, to eat any rice, curry, or solid food of any kind for three days. I gave no instructions regarding secondary complications; I knew they would not be understood by uneducated, non-professional persons. I preferred to hope that the progress of the experience would not be so rapid as to render it impossible for me or some of my subordinates to visit the villages and outposts occasionally.

Lieutenant Roberts, R. E., was Sub-divisional Officer in charge of all the line from Tourbacca to Nellypauk, and he gave the dressers, in that sub-division, all the weight of his personal influence and supervision, encouraging them and the coolies, as well as the people of Budrachellum, by his presence

advice, and care for their wants. His people were all scattered, and, perhaps, it was on this account that his losses were fewer than at Doomagoodiem, but there is no doubt that his arrangements were admirable, and that both his Dressers, Sawmy Naidoo and Rajahgopaul, showed much zeal, self-denial, and skill, not merely in treatment, but in placing the stations and their patients under as good sanitary conditions as possible. When able, they removed the sick to their hospitals for treatment ; when this could not be done, they cheerfully attended them in their lines or villages.

On the Lunka the Executive Engineer allowed me to take an empty bungalow, formerly occupied by an European subordinate, for a Cholera Hospital. It was, therefore, not necessary to discharge the ordinary patients who continued as usually in the Lunka Hospital. The disease spread rather slowly on the Lunka, and Dresser Coopchundlal treated the cholera sick generally at the Bungalow to which I have alluded, but very often in the lines also. He was well supported by Corporal Wells, who got the lines white-washed and gave considerable assistance by going among the people and keeping the line peons, &c., on the alert. At Doomagoodiem Proper, the disease spread for twelve days with such violence that every department was almost at a stand still. The patients were at first treated as much as possible in a large tent capable of holding eight or ten persons, in a small detached hospital capable of holding three or four, and in a temporary shed run up for the purpose. I endeavoured to get rid of all the ordinary sick, but the in-patients refused to leave, knowing how the cholera was raging in the lines and bazaar. No cholera cases were, therefore, actually treated within the General Hospital, though I was prepared to have admitted them had other accommodation proved insufficient. I very soon saw that it was not desirable, however, during such a fierce epidemic, to treat more cholera patients at hospital than were willingly brought there, for the Hospital servants were struck down one after another, and as the sweepers repeatedly ran away and the cooks more than once threatened to strike work, it was almost impossible to carry on the duty. The Dresser Govindasawmy and myself went round the bazaar and lines morning and evening, seeing all the sick and giving such medicines and directions as appeared desirable. We were thus enabled to treat many cases at a very early stage, and, no doubt, some good was done. The result, on the whole

was, however, painful; for at the close of the epidemic our medicines were frequently refused, patients evidently were disappointed, and, most probably, thought our treatment did harm. I believe they erred in this at least, for we were most careful to give nothing that could do harm; in fact, when there was collapse, we gave stimulants only, and insisted on the recumbent posture and warmth to the surface. When the pulse is good and the skin warm, no doubt treatment is most desirable and useful, and during the stage of reaction also. I am, however, sorry to think that we cannot prevent collapse by treatment with any certainty, nor is the use of remedies, in that stage, of any appreciable advantage. Major Stoddard very kindly gave me several bottles of Bathgate's Chlorodyne. It appeared to me a very valuable remedy in doses of forty drops in the early stages. I decidedly prefer it to the pills (of opium gr. i., acetate of lead gr. i., and camphor gr. i.) which I often found it convenient to use. I also gave, in many instances, small doses of laudanum with chalk or carbonate of soda, in the first stage, with seeming advantage. I tried five minim doses of chloroform and laudanum when the chlorodyne was exhausted, but I was not satisfied that any good resulted. When collapse was fairly established, I hardly used any medicine; a little conjee was given occasionally with any spirit we happened to have, and usually five grain doses of carbonate of ammonia were exhibited every four hours. No calomel was given till reaction set in, when a five or ten grain dose was generally given, followed, after a few hours, by half an ounce of castor oil; these doses were repeated or not according to symptoms. In most of the successful cases the collapse lasted only six or eight hours, and the urine was restored in twenty-four hours from the commencement of the attack.

The reaction was, in several instances, excessive and carried off the patient, but overworked as we all were, anxious and hardly able to get our dead buried, there was no opportunity of taking notes of cases. It is the opinion of those Dressers who have been actively employed in former epidemics, that this outbreak was of the ordinary character and severity. I was engaged in 1860 in treating cholera in the D. Troop Madras H. A. on the march from Kamptee to Bellary, and I then formed the opinion, which remains unchanged, that there is a great risk incurred from over-treatment; that our endeavour should be, by all reasonable means, to mode-

rate rather than stop the purging and vomiting, while we have reason to hope that the powers of absorption remain, but that during collapse, when all the functions are in abeyance, we should abstain from giving medicines, in great measure as they may prove a source of embarrassment when reaction sets in. We do not possess medicines capable of always preventing collapse, and therefore many cases perish; but chlorodyne or laudanum, given in wine or spirits, and many other medicines will, no doubt, often check a choleraic diarrhœa that would, if neglected for a few hours, have produced collapse. Mustard applied to the abdomen is probably useful, and I think, that when reaction sets in, mustard plasters should often be applied to the neck and loins.

The heat was not excessive during the epidemic. The wind blew pretty freely and generally from N. E. or N. W.; often the wind was so high as to put the tent in which we treated many patients in considerable jeopardy; these storms are the only objection to the use of tents for the treatment of epidemics. On the 20th April we had a storm with rain, and another on the 24th. The disease decreased on this side of the channel after the 20th, and also at most of the out-stations, but it increased on the Lunka and at the Lime-kiln. On April 27th we had a third storm with thunder, but comparatively little rain fell then or during a fourth storm on May 8th. After the cholera was gone the heat became much greater than before, though we had several storms towards the end of May.

On the Lunka, where the disease spread very gradually, the lines were white-washed, and every compartment where a case had occurred was chunamed and closed up. On this side this course was impossible, owing to the rapid spread and great fatality of the epidemic, but chunam and charcoal were given away freely to all who would apply for them. The evacuations of cholera patients were received in baskets of charcoal or earth, and buried in pits near the hospitals, and into these pits fresh earth was constantly thrown. The hospital here was repeatedly white-washed during the epidemic, and charcoal fires were burned in it every two or three days; but, notwithstanding these precautions, some three or four of the patients, suffering from other diseases, were attacked by cholera. No part of the station escaped, and at least ten per cent. of the natives residing in the compounds of Europeans were attacked, though no European suffered. The

medical subordinates escaped, but two of them lost members of their families.

The hospital cook was attacked, and two out of four hospital peons. The hospital waterman lost his child. One, (if not two) out of four men employed to remove the dead was attacked, and the families of two or three of the others. Mr. Vanstavern's horsekeeper seems to have contracted the disease from having put on the jacket of another gentleman's horsekeeper who had just died of the disease.

All the bedding, cumblies, &c., were repeatedly soaked in a tub of boiling water during the epidemic, and, when the disease was over, I had them burned in the presence of one of the Dressers. I also had the cots exposed for several days, and all the old rope cut off and re-placed by new. The lines were white-washed, and cowdung spread over their floors, before the return of the coolies from the camps.

Small Pox.—In March one case came under treatment and proved fatal. In April, during the epidemic of cholera, about five cases occurred but do not appear to have been recorded. In November and December five cases occurred in a small camp on the other side of the river, and three cases at this station. Two deaths happened in November and December from this disease, both patients succumbing on or about the eleventh day of the eruption.

Vaccination has not been practiced during the year. It is believed that the Chief Commissioner C. P. does not approve of Vaccination in these provinces, except under the immediate supervision of the Superintendent of Vaccination, none of whose staff have yet visited this district. The Executive Engineer has, however, authorized me to procure vaccine lymph from Rajahmundry, in order to protect the families of those employed here from the disease that is now among us, and I entertain hopes of getting two or three hundred persons vaccinated during the early months of 1866.

ART. XII.—*American Notes.* By HENRY KING, A.B.,M.B.C.H.L. Ex-Scholar, Senior and Junior Moderator, Trinity College, Dublin; L. M. Rotunda Hospital, Dublin; Assistant Surgeon, Madras Army.

SERIES II.

(*Continued from Page* 61.)

21. *Bad Breath.*—In the University and College of Physicians' and Surgeons' Medical Schools of New York, to which no hospitals are attached, the Professors obtain material for "Clinical Lectures," by inviting out-patients to attend for advice and medicine, immediately before the lecture hour. One or more of these are selected, and their cases made the subject of diagnosis and remarks before the class. On one of these occasions I heard Professor Metcalfe give some useful hints for diagnosis and treatment of a complaint not very serious but sufficiently distressing, primarily, to the patient's friends, and indirectly to himself or herself.) Fœtid breath may proceed from gangrene of the lungs, from a carious tooth, or from *follicular pharyngitis*:—the last being the cause to which the Professor's attention was principally directed on this occasion. Premising that the infirmity in question appears to occur most commonly in near-sighted persons, perhaps, because their defective vision brings them into closer proximity to their neighbours,—he pointed out that the follicles of the tonsils and pharynx enjoy the power of elaborating a secretion most offensive to the smell. In some cases the disease is deeper, and is a peculiar form of chronic bronchitis. Occasionally, a dilatation of a bronchial tube will contain putrid mucus, emitting a similar odour, which is, therefore, not pathognomonic of gangrened lung: while its cavity may simulate a tuberculous cavern by its physical signs. The treatment consists in washing out the follicles, when they can be got at, with a caustic; bromide of iodine being the most suitable; chlorate of potash, internally, five grains three times a day; and inhalations of the steam of creosote and hot water; or tar (*if purified*, the empyreumatic oil being highly irritating) may be substituted for creosote.

22. *Bleeding in Pneumonia.*—I happened to hear a lecture on Emetics, one afternoon, by a very ancient Professor of Materia Medica in the University School. The small class, evidently attended rather for amusement than instruction, and applauded loudly the old man's frequent allusions to himself and his practice. From him I learned that ipecacuanha is

never given in large doses for dysentery in the present day. He informed us also that his treatment for pneumonia was, and had ever been, (and, no doubt, will be to the end of his practice,) BLEEDING ; assisted, however, by 'alterative' doses of tartar-emetic and blisters. The greatest of these three remedies was the bleeding. In fifty years' practice the Professor had lost *but one* case of pneumonia—which of us can say as much for himself? The one exception was a child of three years old, who was bled indeed, but died because she was not bled enough!

23. *Narcotism in Ovariotomy.*—Professor Thomas exhibited at one of his 'cliniques' an ovarian cyst, which he had removed two or three days previously, and which had contained six quarts of fluid. The operation had been equally simple and successful. An incision, as long as the index-finger, was made in the median line, through the muscles, down to the peritoneum, which was divided, in the usual way, on a director. A large-sized trocar was then plunged into the cyst, and the latter drawn gently out, according as the fluid contents were evacuated. The pedicle was then ligatured and divided. Not a single bad symptom had supervened, the pulse not having risen above 92. I may add that the case ultimately recovered perfectly, and that, but for the operation, it must inevitably have terminated fatally. My reason for noticing this case, which otherwise presents nothing remarkable, is, that the operator attributed his success, in great measure, to the fact that the patient had been kept in a half-dreamy state, ever since the operation, by means of hypodermic injections of morphia.

24. *Hypodermic Injections* as well of morphia, as of other drugs, were favorably thought of in New York when I was there. Majendie's solution of the former was used (gr. ii. to the oz.,) and from five to twenty minims injected at one time. Any pain resulting from the introduction of the syringe may be obviated by applying a few drops of chloroform to the part, and operating after they have evaporated. Quinine has been introduced into the system in this way, and (it is said) with advantage: although, *à priori*, we might expect the acid, necessary for solution, to produce irritation in the areolar tissue. I found that some practitioners preferred the rectum both to the mouth and to the subcutaneous tissue as a medium for introducing morphia, quinine, &c.

In connexion with this subject I may mention some extraordinary instances of toleration of morphia exhibited by the

mouth.* In one case a lady suffering from severe pain, (not peritonitic but neuralgic), arising from an abscess following abortion, took *sixteen* grains of sulphate of morphia, daily, in two doses. She suffered much from constipation in consequence, being sometimes thirty days without a motion of the bowels. Dr. Cox published a case of a patient who took *sixty* grains of the same drug in 24 hours. In the former instance, at least, the salt was analyzed, and found to be of the usual strength. In a case of puerperal peritonitis, eighteen grains were given *hourly* for 24 hours, but with what result, I did not hear.

25. *Opium in Peritonitis.*—Professor Alonzo Clark appears to have adopted the opium treatment of peritonitis before seeing Dr. Graves' well-known remarks on the subject. In a lecture which I had the advantage of hearing in December 1863, he stated that his practice, generally, was to give two grains of opium, or an equivalent amount of some of its preparations, every second hour: but the quantity will vary according to the idiosyncrasy of the patient. If the stomach be irritable, the drug is administered *per anum.* Contrary to a very general opinion, Dr. Clark considers medicines exhibited in this way *equally* efficacious as if given by the mouth, and recommends the same dose in either case. He continues to maintain slight narcotism until the pulse falls to 100, and tympanitis diminishes. When the disease is subdued, the dose of opiate is to be gradually reduced. As to the degree to which narcotism may be, and ought to be carried, the rule is—never to let the respirations fall below 12. The evacuations will, in most cases, be resumed spontaneously, but if they are not, the disease being completely subdued, we may give castor-oil or other mild cathartic; or, better still, enemata.

26. *Puerperal Fever.*—It is in this disease that the beneficial effects of opium are most striking. Puerperal fever generally begins before the third day after delivery; but it may set in (as in one case of Dr. Clark's, which terminated fatally), before the completion of labour. There is a febrile element in the disease, often as strongly marked as in typhus or typhoid. It may be divided into puerperal peritonitis, and puerperal metritis, according as the prominent lesion is of the peritoneum or of the uterus. In either case the disease begins with rigor. The pulse rises to 130 or 140, there is generally cephalalgia and pain in the back at the part where the uterine nerves are given off. In peritonitis, with which

* I have seen more than once this expression Latinized into *per* OREM !!!

I am principally concerned at present, there will be, in three cases out of four, tenderness beginning over the uterus as well as pain. The tenderness and pain increases, the mind remains clear, the strength is prostrated. The last symptom distinguishes the affection from the so-called "milk-fever," which also begins with rigor, but in which there is no loss of strength—which, moreover, terminates in 24 or 36 hours.

Such is the disease in the treatment of which Professor Clark has found opium so valuable a remedy. The first case in which he tried it took one hundred grains of opium in three days, combined, however, with calomel. The patient recovered with pyemia, which resulted in the formation of multiple abscesses in the lungs, simulating phthisis, but distinguished from it by the superior whiteness of the spots. It is worth noticing that this woman returned afterwards to the obstetric wards of Bellevu Hospital for delivery, thus proving that sterility, though a probable, is not a necessary result of puerperal fever.

Subsequently, seven cases removed from the labour wards, were placed simultaneously under Dr. Clark's care. One of these was returned, not suffering from the disease; one died within twenty hours; five recovered under the opium treatment which, Dr. Clark says, was not properly carried out in the fatal case. He recommends no poultices, no purgatives, no blood-letting, local or general, no mercury—simply opium: and his known eminence in the profession, as well as his success in the seven cases mentioned, give the greatest weight to his recommendations.

Puerperal metritis is sometimes found combined with peritonitis. In it the lochia are generally suspended, for from six to eighteen hours, returning changed in colour, less red and more yellow than they ought to be, and occasionally fetid. The uterus does not contract; the vagina is hot and dry; the bowels are not tender, and sometimes the belly is not swollen. A very common result of this form of puerperal fever is pyemia, evinced by sweating and great gastric irritability, with loss of strength. The disease will often terminate favorably by the elimination of the pus from the blood, not unfrequently abscesses forming in the breasts, uterus, &c.

27. *Veratrum Viride in Puerperal Fever.*—This drug, suggested by its well-known power of reducing the pulse, has been employed in puerperal fever, and with considerable success. It will probably be found more useful in the metritic form of the disease. It produces, however, great pros-

tration and severe vomiting; and on this account, if no other, must yield to opium in utility. The dose is two minims, increased to five of "Norman's Tincture," every two hours.

28. *Hot air bath in Bright's Disease.*—Some years ago the Physicians of the New York Hospital were persuaded that they had succeeded in curing this disease completely by means of profuse diaphoresis, induced by hot-air baths. This method of treatment was adopted by the other hospitals, and pursued with equal success; indeed, it is still the treatment relied upon. It was found, however, that though *all* the symptoms disappeared under the use of this powerful remedy, the disease inevitably recurred after a longer or shorter interval of health. It may be interesting to note that, in the Bellevue Hospital, gangrene of the leg is a not unfrequent result of Bright's Disease.

29. *Poisoning by Oil of Tansy.*—At a meeting of the New York Pathological Society, Dr. Bauer presented the stomach, uterus, and ovaries of a young woman who had been poisoned by an overdose of oil of tansy, a drug not mentioned by Christison or Taylor, but in common use in America for the purpose of procuring abortion. The former owner of the viscera exhibited by Dr. Bauer, a married woman, having passed, by one week, her menstrual period without menstruating, coolly walked into an ordinary Chemist's shop and asked for something to produce abortion. The Chemist as coolly complied, giving her, out of two bottles, about six drachms of fluid, which she drank on the spot. She went home and died in less than two hours and a half, after severe epileptiform convulsions. The brain was found somewhat congested, stomach considerably inflamed, the uterus contained an ovum. The peculiar odour of tansy was easily recognized when the abdomen was opened, and even, it was said, before.

30. *Hernia Cerebri.*—I heard Professor Hamilton, of New York, (whose surgical works are well-known in Europe) express his opinion that most herniæ cerebri are due to abscesses in the substance of the brain, and, therefore curable by punctures so as to evacuate the contained pus. In most cases of recovery there *has been* a discharge of matter. The hint may be useful to practical Surgeons.

31. *Phosphoric Necrosis.*—It is well known that persons who work in lucifer-match manufactories, or those who are in other ways exposed to phosphoric fumes, are liable to necrosis of the lower jaw. I saw a girl in St. Vincent's Hospital

suffering from this disease in a very severe form. She had worked in a match manufactory for years without inconvenience until a tooth was drawn. This would lead us to infer that any denuded bone would be as liable to attack as that of the lower jaw; but I am not aware of any instance of the upper jaw being attached, and teeth are drawn from it as often as from the lower.

32. *Fractured Radius.*—Professor Van Buren showed me a dry preparation of a fractured radius, which he considered typical of this injury when it results from a fall forward, the hand being thrown out to save the head. The concave articulating surface of the radius is driven in by the impulse of the convex carpal bones, and divided into four or more fragments, more or less separated from each other in proportion to the greater or less violence of the blow. This explanation will account for the external appearanee of the injured part.

33. *Ovariotomy.*—In a recent work of Professor Van Buren's, he gives the number of cases in which this operation had been performed, to his knowledge, in the United States, as 36; of which 14 terminated fatally. Five of the cases occurred in New York, and of these two were successful, three died of peritonitis. One of the successful operations is that mentioned in Note 23, I suppose. The second was probably one which I heard spoken of in a discussion at a meeting of the Pathological Society, in which the peritoneal cavity was *rinsed out with warm water,* constitutional symptoms having set in, in consequence of absorption of decomposed blood. During the greater part of the 58 days which elapsed before convalescence was established, these injections were constantly employed, their omission for more than eight hours being followed by the re-appearance of unfavorable symptoms. When any offensive smell was present, a little chlorinated soda was added to the warm water injected. The washing out was practised at least one hundred times in the 58 days. One of the unsuccessful cases also was brought before the Pathological Society. Adhesions were numerous and firm, so that the operation would probably have been fatal whatever after-treatment might have been adopted. No attempt was made, however, to give opium a fair trial. Whereas in the first-mentioned case, morphia was exhibited hypodermically before the patient was put upon the table, and its full influence maintained afterwards till all danger of inflammation had passed away, in this case no opium, in any form, was given until inflammatory symptoms had declared

themselves: and then only twenty-five minims, every third hour, of a preparation no stronger than laudanum.

It is a fact worth mentioning, which I give on the authority of Dr. Van Buren, that Dr. Sims performed ovariotomy on a lady who was delivered of a living child, at full term, six months after the operation.

34. *Dangers of Midwifery Practice.*—Professor Thomas showed me the cicatrix of a chancre on his fore-finger, the result of vaginal examination of a patient, while there was a slight breach of continuity on the finger. The sore was fully developed about a month after infection, and he suffered severely from eruption and sore-throat as long as eighteen months afterwards.

PART II.

REVIEWS AND NOTICES OF BOOKS.

Clinical Lectures and Reports, by the MEDICAL and SURGICAL STAFF of the London Hospital. Vol. I. 1864. London: JOHN CHURCHILL AND SONS. 8vo. pp. 517.

FOR many years past the staff of Guy's Hospital have published, at certain intervals, volumes of Reports, which have been accepted by the Profession as of sterling value; the volume last issued was the eleventh of the third series. The Medical Officers of the Royal London Ophthalmic Hospital lately followed the example of their brethren of Guy's; their fourth volume has been completed, and they purpose issuing in future a Report regularly every quarter. In 1864 the staff of the London Hospital issued the handsome volume before us, and a second volume, which has not yet reached us, was published last October. We observe that the staff of St. Bartholomew's Hospital have recently issued a similar volume of Reports, and we should not be at all surprised if all the Metropolitan and several of the larger Provincial Hospitals were to follow suit.

There can be no doubt that the vast accumulation of carefully observed and recorded facts in Medicine, which is proceeding at the present day to a much greater extent than has previously been the case, must have and is having its effect upon our science. The nineteenth century has witnessed gigantic strides in all the departments of Physical Science; and although Physicians must still refer with pride to the great Fathers of Medicine, still they can but acknowledge that the dark conjectures of the days that are passed sink into insignificance when compared with the positive assurances which have been attained to in the broad effulgence of light which has dawned upon these latter days. The spirit of progress is abroad, and if we could but get a little more of its influence exerted in the domain of Therapeutics, the future of Medicine might be looked to with a more enlarged confidence. We must not

be supposed to ignore the advances that have been made in Therapeutics; we acknowledge that many worthy workers have been in the field, that great advances have been made in dietetics, that the curative properties specially attaching to alcoholic stimulants are now much better understood than they were, that some valuable remedies of known action have been added to our stores, but it is unfortunately still left to us to look for a greater amount of certainty as to the actual physiological and curative effects of drugs.

But our parenthesis must not extend or we shall lose sight of the London Hospital Clinical Reports.

The volume is edited by Dr. Andrew Clark, Dr. Down, Mr. Hutchinson, and Mr. Maunder, an array of names in itself a sufficient guarantee that something worthy of attention is to be found in the pages of the book. And a mere glance at the table of contents, promises that the searcher will not be disappointed.

The first article which particularly attracts our attention is Mr. Hutchinson's Clinical Report on Leprosy. He relates four cases, and an appended case which came under notice whilst the pages were passing through the press. He notices the strictly endemic origin of the disease, and that Dr. H. V. Carter of Bombay has, in cases of the anæsthetic form found that the nerves of the affected tracts are usually much swollen owing to the deposit of semi-transparent albumenoid matter between the nerve tubules, by the pressure of which deposit the tubules become disorganized and atrophy ensues. He gives some conjectures as to the true pathology of leprosy, which conjectures he summarizes as follows :—

"The sum of our conjectures then appears to amount to this, that leprosy is far too specific and peculiar in its symptoms to allow of our supposing it due to the influence of general poverty; that the cases in which Europeans are attacked, all indicate the power of endemic influences; that of endemic influences, food is the one which has most of probability as to its being the true cause; and lastly, as the disease is only met with near the sea, we may plausibly guess that it is in some way connected with a fish diet."

Those of our readers who are interested in this matter will find a valuable paper on Leprosy by Mr. F. Day, in Vol. I., and another by Dr. vanSomeren in Vol. III. of this journal. These gentlemen have a right to speak on the subject as each of them has had a great experience, one in the Lasarushuss at Paliport, and the other in the Leper Hospital at Royapoorum.

We know that Mr. Hutchinson has had an opportunity of consulting the later issues of our journal, but we presume that the earlier numbers must have been sealed books to him, or he might have been inclined to modify his views as to his last conjecture. Dr. vanSomeren says :—

"The operation of climate in the development of leprosy is certainly not clear, and probably problematical. Not only do we know that the disease prevails in temperate regions, but even within the tropics it is found under very different climatic conditions. On the elevated and cool plateau of Mysore, its frequency renders a Lazaretto necessary in Bangalore, while along both East and West littoral lines of the Indian peninsula, and in the insular climate of the Mauritius, its prevalence serves to make it a scourge."

There are other matters carefully discussed in Dr. van-Someren's papers which would most likely induce Mr. Hutchinson to somewhat modify his conjectures.

We next come to a paper, by the same author, headed "*Clinical data respecting Cerebral Amaurosis, more especially with reference to that form supposed to be connected with the use of tobacco.*" This is a model paper, the salient points of the cases are given, and the following "conclusions" and "desiderata" are arrived at :—

"Conclusions.

"1. That there is a special form of cerebral amaurosis usually unattended by other permanent disorder of the nervous system, in which white atrophy of the optic nerves supervenes.

"2. That there is little doubt that this form of amaurosis commences centrically, the alterations in the supply of blood to the optic nerve and retina being secondary.

"3. That in the early stages of this disease, symptoms of functional brain disturbance are usually present: somnolence, headache, giddiness, slight stupor, and sometimes vomiting.

"4. That the symptoms last-mentioned almost always pass off when the amaurosis is more advanced.

"5. That the rapidity of the extinction of sight is usually in ratio with the severity of the other cerebral symptoms.

"6. That this form of amaurosis may occur at any age, and in either sex.

"7. That it now and then follows exanthems, congenital syphilis, disturbed menstrual functions, great anxiety, injuries to the head, &c.

"8. That it occurs in large excess in adult males, typical and uncomplicated examples of it being, indeed, very infrequent in women.

"9. That in men it is sometimes attended by disturbance or suspension of the generative function, but that in the great majority of cases no such connexion is proved.

"10. That there is no reason to think that it is frequently consequent on masturbation, or that it occurs in any especial connexion with acquired syphilis or intemperance.

"11. That no adequate explanation can be afforded of the clinical fact that men suffer from it much more often than women.

"12. That it does not occur in connexion with any special occupation.

"13. That a large proportion of those who suffer from it have been smokers."

"Desiderata.

"1. A much more extended series of cases.

"2. More detailed information as to the use of tobacco, by those affected by this form of amaurosis.

"3. Information as to whether there may not be a considerable proportion of men affected by it who have never used tobacco.

"4. Information as to the co-existence or otherwise of varicocele with this form of amaurosis.

"5. Information as to whether it ever occurs in women who have smoked. In some countries where smoking is more common amongst women than it is here, valuable information on this head might be obtained.

"6. Better knowledge as to whether the course of the disease can, in any considerable number of cases, be suspended. 1st, by making the patient give up smoking; or, 2nd, by regulation of sexual habits."

We consider Mr. Hutchinson's first and second desiderata matters of very considerable importance in arriving at any correct conclusion; and we should be inclined to put them in another form, say:—

A very careful general census of the number of persons who habitually consume tobacco.

The number of such persons who use the drug to excess.

The number of cases of amaurosis occurring in such persons.

The number of such persons free from any amaurotic affection.

We must acknowledge, however, that we have no hope that any very definitive conclusions are likely to be arrived at, for our author, who must be acknowledged to be a most careful observer, and a most unprejudiced reasoner, says,—

"It goes for very little to allege that men may smoke very heavily and never suffer, since we know that differences in constitution modify most materially the influence of drugs. The statement that amaurosis is not now frequent in countries where the use of tobacco is far greater than it is in England, requires in the first place proof; and secondly, is open to correction, both on account of difference of race, and difference (often very great) in the quality of the tobacco used."

We have no desire to put in "a plea for tobacco," but we might assuredly say that if a small number only of persons habitually using the drug suffer from amaurosis, the *disease* is due to "differences in constitution," or "difference of race," or that the sufferers use a tobacco of a quality pernicious, when compared with that which is ordinarily consumed. However, Mr. Hutchinson shows that out of thirty-seven cases of idiopathic uncomplicated cerebral amaurosis, symmetrical and in adult males, twenty-two acknowledged that they smoked, and some of them to excess.

Mr. Hutchinson follows with some *Extracts from Clinical Lectures*, in which are several matters worthy of note. First, we notice an interesting post-mortem observation. A man died of phlegmonous erysipelas, some years after having suffered a transverse fracture of the patella; the following condition of the femur was found:—

"In the front aspect of that bone, extending upwards from the intercondyloid hollow, is a broad shallow trough three inches long, evidently formed by the pressure of the upper fragment of the broken bone in gliding upwards and downwards during the flexion and extension of the joint. The union of the fragments is by strong membrane and ligament about two inches in length."

This discovery led to the examination of a patient then in hospital with a recent fracture of the left patella, and an old one of the right,—a transverse fracture with ligamentous union about two inches in length. In this man the trough was very well marked, with a prominent outer lip, evidently the result of growth.

Again we quote from remarks on a case of *Acute Inflammation after puncture of a hydrocele*:—

"I directed your especial attention to the herpetic eruption on the man's lips, asking you to note that it occurred in this instance in connection with acute inflammation of a serous membrane. I reminded you of its frequency as a symptom of pleuro-pneumonia; and added, that it also occurs in ague districts in the early stages of intermittents; that it is also often seen after rigors,

consequent upon catheter-passing. In summary, I stated my belief, that it is, in all these instances, connected chiefly with the phenomenon of rigor, and that it certainly is not pathognomonic of any special inflammation. A severe shivering fit, especially if it be the first, may be followed by herpes on the lips, and it matters not whether the rigor be premonitory of inflammation or otherwise."

Dr. Down contributes an interesting account of a case of *Polysarcia* in a girl of imbecile mind. She was treated with various diets, but no very marked decrease in weight occurred until she was placed upon a purely meat diet, when her weekly decrease was 28oz. Subsequently, the extract of the Fucus Vesiculosus was given in half-drachm doses thrice a day, and the weekly decrease was 29½oz. In 8½ months, during which this treatment was kept up (except for one month when she had an attack of scarlet-fever, and was dieted on bread and beef-tea), her weight was reduced from 206 to 147lbs. So that Dr. Down may be said to have out-Bantinged Banting.

Mr. Maunder furnishes a report of six cases of Hospital Gangrene. In the treatment of this affection he recommends the application of nitric acid, and the copious use of water, either as a bath or by irrigation. We must cordially agree with him in the following remarks:

"In all cases, where practicable, a change of air is the grand *desideratum*—removal from one room to another; from one building to another; or from a town to the country, and especially the latter, will exert a salutary influence."

We have frequently found a great change for the better take place in sloughing ulcers and other unhealthy open surfaces, upon simply changing the situation of the patients' bed even without removal to another ward.

Mr. Maunder notices an important practical point:—

"A distinctive character of *hospital* and *traumatic* gangrene. At a time when hospital gangrene exists in an hospital, every variety of sloughing is liable to be regarded with suspicion and anxiety, and I have watched with great interest three cases of wounds after operation which have been subjected to sloughing-traumatic gangrene. In either case the portion of integument, which was ultimately cast off, was subjected to *desquamation of its cuticle*, a pathological condition which did *not* exist in any case of hospital gangrene which came under my observation."

Mr. T. B. Curling supplies *Notes of Cases illustrating some very rare forms of Fracture and Dislocation of the Vertebræ.* Both physiologically and pathologically these

cases are of great interest, and they are well worthy of attentive study.

Dr. Hughlings Jackson contributes an admirable lecture *on the study of Diseases of the Nervous System*, which gives us the impression that he must be not only a most observant and enlightened physician, but also a first-rate teacher. He impresses upon his audience that neither the Physiological history alone, nor the Clinical history alone, can be taken as a basis for diagnosis of a case, or as a basis of treatment. The natural history is only to be arrived at from a consideration of both of these. Every case must be studied as presenting :—1. Disease of Tissue : (Changes in tissue). 2. Damage of Organs : 3. Disease of Function. He proceeds to illustrate these general views by special instances; taking, first, a common general disease which produces much local damage to several organs, viz. : Rheumatic Fever. He notices how the fibrous tissues are attacked, how liable the heart is to be damaged, and how, as a consequence, the functions of all other parts, but especially the lungs and liver, are liable to be disordered; and he continues :—

"Now, notwithstanding the importance of the organ affected, we have in rheumatic fever to think more of inflamed fibrous tissue than of heart disease ; and the question, as we stand by the bedside ready to prescribe, is how to prescribe for a patient who has rheumatic inflammation of his fibrous tissues, and just then the information as to the precise valve affected is comparatively insignificant."

The wisdom contained in the following remarks induces us to make the extract, notwithstanding its length :—

"Suppose the turmoil of tissue-changes is over, and that the patient has got 'well' as he supposes, and perhaps even as we thought too. A year later, he comes to us again, and we find that he is suffering from disease of the heart. We must now think seriously as to the kind of damage to the organ. For, although the damage is exceedingly *local*, it is in an essential part of the mechanism, of a most *central* organ. We get to know generally the kind of damage by auscultation and percussion. Still we cannot treat a damaged organ as a Surgeon can ; he can make an artificial pupil, or nail two bones together, but when tissue-changes are over, we can do little to reverse them. We must pass next to the disorder of function. The patient often does not know that he has disease of the heart, but comes because he has dropsy or breathlessness. He does not come for his damaged organ, but for disorder of function, consequent on derangement of its mechanism. We may find a bruit when a patient attends for some other disease, but we can do nothing for that. We can

never make the valves fit, nor remove vegetations from them; so that it is of more moment to study the functions disordered, which we can help, than the organ damaged, which we cannot repair. But information about the latter is of great value, as it helps us to gain a clear idea of the former.

"Here let me give you a piece of advice. Never treat a patient on stethoscopic evidence only. The heart may be a bad musical instrument, and yet a good force-pump. However noisy the first sound may be at the base of the heart, if the apex be in its right place, if there be no signs of hypertrophy, no anæmia, if the pulse be good, and above all, if the patient does his work well, we have nothing to treat. To treat such a case would be to treat a sound. It would be just as great a mistake as the drunken captain made, who tried to navigate his vessel round a spec of dirt on his chart, which he mistook for an island. And in cases of aortic, or mitral, regurgitation, we could only, at the most, give such remedies as would improve the general health, or possibly act on the muscular tissue of the heart itself to enable it to keep up the stream of blood in spite of the imperfection of its valves. But we should render the patient much more service by advising him how a man with a damaged heart should choose his occupation, so that the circulation of important organs might not be obstructed, or in other words, that function might not be disordered."

Dr. Jackson proceeds to give several other instances, showing how sometimes it is the disease of tissue, sometimes the disorder of function, which guides the physician in his treatment. He gives some capital illustrations from diseases of the eye, and then takes hemiplegia to afford instances of—1st, damages of the same organ by different affections of its tissues; and 2nd, damages of very different organs, the result of similar tissue-changes. First, he takes four cases in which the physiological symptoms would be *alike*, even in danger, to a nicety. A patient may have hemiplegia (of the left side) —1, from syphilitic disease of the pia-mater on the surface of the right hemisphere setting up some secondary change in the motor track; 2, from embolism of the right middle cerebral artery; 3, because blood has been effused in the right corpus striatum; 4, because a tumour has grown in, or grown into, the right corpus straitum.

"But to think of these cases baldly under the name of hemiplegia as an entity, would leave us with very vague grounds for treatment. We should be on a par with the public, who ask what is good for a cough? In the first case, we should have to treat syphilis; in the second, limited softening of the brain; in the third, some more general affection, of which degeneration of arteries was the more prominent feature, and rupture of one or more vessels in the corpus

striatum the dramatic event; and in the last, tumour, if we knew how. In all, we should treat the patient."

To illustrate the second point he again takes four cases of hemiplegia, each of a *different* and well-marked kind, from disease of the same sort, but at different points of the motor tract:—

"1. A patient has suddenly paralysis of the left arm and leg, and of a very small part of the face, and slight deviation of the tongue. Clot in the right corpus striatum.

"2. Paralysis of the third nerve on the left side, and of the arm and leg and of a small part of the face on the right. Clot in the left crus cerebri.

"3. Paralysis of the portio dura, and complete deafness on the left side, paralysis of the arm and leg on the right. Clot in the floor of the fourth ventricle, involving the nuclei of the left facial and auditory nerves, and also the fibres, which have just crossed, coming from the limbs on the right side.

"4. Sudden and complete paralysis of the tongue, palate, and of the vocal cords, all on the left side; weakness of the left limbs, and slightly of the right. Clot involving the lingual and spinal accessory nuclei, and implicating the fibres from the limbs, about their decussation.

"Now, how exceedingly various are the sets of symptoms produced by the same tissue changes. But we have to think, as regards treatment, of effusion of blood in nervous tissue, rather than of disease of the corpus striatum, crus cerebi, pons Varolii, &c. To attend to the seat of damage only, is to study merely the physiology of disease, and is not practical medicine."

Dr. Jackson contributes two other papers, the first entitled, "*Illustrations of Diseases of the Nervous System*," and the second, "*Loss of Speech; its association with valvular disease of the Heart, and with Hemiphlegia of the right side.—Defects of Smell.—Defects of Speech in Chorea.—Arterial regions in Epilepsy.*" Each of these papers will amply repay perusal and each defies any useful analysis at our hands. Our space is too limited for such notice as they deserve.

Dr. Down gives a very favourable account of his success in the treatment of *Scarlet Fever* by Sesqui-carbonate of Ammonia.* In 1863 a severe epidemic occurred among the inmates and staff of the Asylum for Idiots at Earlswood; in the space of five weeks one hundred and ninety-two persons, out of a population of four hundred and forty, were prostrated with scarlet fever. The total mortality was ten, or

* See page 159, Vol. V. of this Journal.

a little over five per cent. One hundred and forty-seven of the sufferers were idiotic or imbecile, and nine of these died, seven of them being the subjects of tuberculosis. The remaining forty-five were officers and servants, among whom there were fourteen malignant cases and but one death, a male attendant not long since recovered from an attack of acute rheumatism, with an adherent pericardium and a seriously damaged mitral valve. Dr. Down says the cases may be fairly classified thus:—sixty-five of the simple, seventy-eight of the anginose, and forty-nine of the malignant variety. The treatment adopted in every case was the administration of five grains of sesqui-carbonate of ammonia in one ounce of water every four hours. The diet was milk and beef tea, while wine was liberally given in all cases in which great depression was manifested.

Mr. Hutchinson supplies details of some cases of *Relapsing Pemphigus,* for which disease he considers arsenic a specific.

The Gold Medal Reports by the Students of the Hospital follow, and we can only say that the cases appear to have been carefully selected, and well reported.

Dr. Woodman furnishes some *Miscellaneous Cases*; we extract the following from his paper:—

"The following two cases are interesting as examples of remarkable fecundity in the human female.

"Mrs. W., now a nurse in the London Hospital, was married in 1839, at the age of 21 years. In nineteen years (*i. e.* 1858) she had borne twenty children, viz., eight *single* births, three times *twins*, and *triplets* twice.

"Elizabeth D., of old Montague Street, Brick Lane, was attended by one of the maternity pupils (Mr. Dyte,) in her twenty-sixth labour. She had previously borne twenty-five children, all of them at full time, or near it."

Dr. Andrew Clark contributes an excellent practical paper, entitled *Gleanings from the field of Observation.* Our limited space will not permit us to do much more than refer to this paper. Dr. Clark notices that free nuclei are invariably present in the secretion of the tonsils; that shortly after a meal, the tonsillar secretions contain, 1st, the free nuclei; 2nd, large spherical cells containing particles resembling the free nuclei; and 3rd, large flattened cells, with such excavations as would have been formed by the extrusion of bodies similar in size to the particles in question. He concludes that the free nuclei arise, grow in, and are ultimately extruded from the

more or less spherical cells, which then collapse and by and bye become effete. As to the purpose of these bodies he remarks,—

"That they play some part in the process of digestion seems probable from these facts :—that they are formed in greatest numbers about the time of eating ; *that a muscular arrangement exists in the tonsils, by which the fluid in which the nuclei float is expelled during mastication and deglutition ;* and that the outlets for this fluid are so constructed that it is made to pass down the pharynx with the food.

"As the tonsillar juice possesses the property of converting starch into sugar : as the degree in which this property is possessed seems to vary with the proportion of free nuclei present ; and as these bodies are in greatest numbers in the early part of digestion, it is not improbable that they may exercise in the stomach some influence in the digestion of those starchy foods which have escaped the action of the salivary fluids of the mouth."

The Physiologist cannot fail to be interested in the fact that the observations of Dr. A. Clark add another to the two digestive fluids which we know have the power of converting starch into grape sugar.

We again quote from Dr. Clark as to the detection of small quantities of albumen in the urine : —

"Pour not less than half a drachm of *fuming* nitric acid into a test tube ; incline it, and then let a like quantity of the suspected urine trickle down *very slowly* to the acid, over the surface of which the urine will float without the slightest admixture. If albumen be present, a milk-white, sharply-defined, tolerably tenacious film will form at the exact point of junction of the two fluids. This film is never, at first, thick ; and when the amount of albumen in the urine is extremely minute, it may be so thin as to become visible only by reflected light when the test tube is inclined. Occasionally, when very thin, the albuminous film is dissolved in the course of a few hours. Commonly, however, it increases in breadth, diminishes in density, becomes yellow or yellowish-green at its under-surface ; and throws off minute coagula which fall through the acid to the bottom of the tube.

"Nitric acid used in this manner as a test for albumen is also a test of the presence of uroxanthine, or bile—either or both of which are not unfrequently present in temporary and functional albuminaria.

"If, in immediate contact with the acid, a ruby or violet ring is developed, uroxanthine is present ;—and bile also, if in addition to a red or violet there is formed likewise a green-coloured ring, which remains for some time.

"Two feasible objections are urged against depending solely on the

employment of nitric acid in the manner described, as a test of the presence of albumen; and I have myself noticed a third; but a careful examination of their force leads me to the conclusion that they are more theoretical than real.

* * * *

"The film produced by the contact of nitric acid with albuminous urine is quite different from any kind of turbidity. Confined to the layer of urine resting upon the acid, white like a disc of compressed cotton, tenacious, and when shaken with its associated fluids, breaking into flaky fragments, it seems improbable that any but the merest tyro should mistake it for anything but what it is."

Dr. Clark further observes:—

"The occasional occurrence of renal casts in small quantity in the urine is no more a necessary sign of confirmed renal disease than the presence of albumen. * * Undoubtedly their presence is of graver significance than the mere presence of a little albumen. But it is only their daily occurrence with failing health which can justify their being looked upon as signs of settled structural disease."

Dr. Clark remarks, on the other hand, that the absence of albumen and casts from the urine does not justify an inference of the absence of structural disease of the kidney. The general failure of health, the loss of flesh, strength, and colour; the nervousness alternating with dulness, the palpitations and breathlessness, and the habitually watery urine with much free ammonia, guide to the original seat of disease.

Mr. Heckford, the late Resident Accoucheur to the Hospital, contributes *Notes of Post Mortem Examinations of still-born Children and of young Infants*; upon which Dr. Barnes furnishes *Comments on the Conditions of Still-birth.*

Mr. L. S. Little, in 20 pages, gives a very interesting account entitled, *Surgical Notes on the Campaign in Schleswig*, 1864.

Dr. Herbert Davies prints a Clinical lecture, *On the Treatment of Rheumatic Fever in its acute stage, exclusively by free blistering.* The treatment was *absolutely and entirely* local,—the cases for the most part of a marked acute character—and the results, in rapid relief of the pains, quick convalescence, and freedom from cardiac disease, highly satisfactory. Thirteen cases are given and admirably tabulated. In six cases the patients were discharged within three weeks, in four within a month, and in three only was there any approach to the "six weeks" which the elder Dr.

Warren used to say was the only thing "good for" acute rheumatism.

There are other papers in the volume well worthy of attention, and the whole concludes with the statistics of the London Hospital for the year 1863.

Our notice has extended to a much greater length than we intended, but we felt bound to offer some proof that the London Hospital staff were fully justified in following the example of the Guy's men. In our view, the book is a valuable and highly creditable contribution to Medical literature, and we shall give a hearty welcome to the second volume of the London Hospital Clinical Lectures and Reports.

How to Work with the Microscope. By LIONEL S. BEALE, M.B., F.R.S., Fellow of the Royal College of Physicians; Physician to King's College Hospital, &c. Third edition. Illustrated with fifty-six plates, containing upwards of 250 figures, and a photographic plate. London: HARRISON, 59, Pall Mall. 1865. Small 8vo., pp. 272.

The Preparation and Mounting of Microscopic Objects. By THOMAS DAVIES, London. ROB. HARDWICKE, 192, Piccadilly, 16mo., pp. 156.

THE first of the two works at the head of this notice is almost a newly written treatise. The author remarks that such great advance has been made in many branches of microscopical enquiry since the first edition was published seven years ago, that many of the paragraphs have required to be re-written, and three new chapters have been added. He tells us in his preface that he has spared neither time nor trouble, and has refrained from hurrying the book through the press, feeling satisfied that time spent in perfecting practical details connected with demonstration is well employed :—

"For, however, some may be inclined to disparage hand work as distinguished from head work, it is certain that no one can become a good microscopical observer, unless he is possessed of considerable manual dexterity, to be acquired only by long practice ; and no work can be higher or more useful than that of assisting to make

men original workers in any department of science, and of encouraging original work. Working books by working men will do more towards these ends than the most brilliant discoveries. and the author believes that earnest men cannot labour more usefully than by endeavouring to make others work."

We know that a great many persons are in the habit of using the microscope in a rough kind of way, without possessing much knowledge of its construction or of the optical principles upon which its value depends. Dr. Beale says that much of the disappointment suffered by many who are provided with microscopes may be traced to the erroneous idea that it is only necessary to place an object in the field of the microscope in order to make out its structure. He therefore commences his work with a cursory description of the instrument, then gives directions how to select a microscope, next fully describes the necessary accessory apparatus, and lastly instructs his readers *how to observe*, which, of course, includes the preparation of objects.

Of course, it would be quite out of place were we to enter upon any criticism of Dr. Beale's work in these pages. We enrol ourselves under the banner of those who consider that an accurate knowledge of pathology cannot be obtained now-a-days, without recourse to the microscope, and that, in many cases, diagnosis cannot be said to be full and complete unless this instrument has been resorted to not only to examine altered tissues, but also to investigate the character of secretions and excretions; and we are, therefore, thankful to have at hand such an admirable guide as this volume affords, and we take this opportunity of cordially commending it to the attention of all of our readers who possess a microscope.

The work is beautifully got up; the woodcuts are well executed, and it is interesting to notice that many of them are the work of a lady, Miss Powell. A small lens of low power is furnished with the volume for the purpose of bringing out the details of Dr. Maddox's elegant photographic plate which forms the frontispiece.

Mr. Davies's little book is a very useful and practical treatise on the preparation and mounting of objects. It does not profess to be anything more; indeed, the author says he believes he is actually supplying a want which has long been felt, for the information he has collected into one volume has hitherto found place either in articles scattered in various journals, or as addenda to works specially devot-

ed to a description of the microscope. There are no descriptions of instruments, or of apparatus beyond that actually used in mounting, neither are there any instructions how *to use the microscope.* The entire work has reference solely to the *object* and its preparation ; in fact, it might very well be entitled "A Handbook of Microscopic Object Manipulation." There are no illustrations, and, although this rather disappointed us on first looking through the volume, after a perusal we feel convinced that none are absolutely needed.

The book is sold at the very moderate sum of half-a-crown, and we are confident that those who need some practical instruction in the mode of preserving and preparing objects for examination under the microscope will find Mr. Davies's little work an eminently useful guide.

Whilst upon the subject of microscopes, we may mention that we have lately had the opportunity of using the binocular arrangement adapted to a Ross's No. 1 instrument; and we can testify that, as compared with the monocular body, the binocular brings out the details of preparations in the most perfect manner. We only used the lower powers for the examination of injected preparations and polarizing objects, so that we cannot speak as to whether there is a corresponding advantage when the binocular is used with the higher powers. The effect was far greater than we expected, for as soon as the focus had been adjusted and the two eye-pieces had been brought to such a degree of separation as corresponded with the width between the pupils, the irregularities of surface started out into such relief as can only be compared with that obtained by the stereoscope. We have hitherto been quite content with our microscope (a Smith and Beck's) as it is; now that we have had the advantage of ocular demonstration, we shall not be satisfied until we have procured a binocular body.

A Treatise on the Small-pox, by W.C. MACLEAN, Esq., M.D., *Modified and Adapted for the Natives of India,* by J. SHORTT, Esq., M.D.; *Translated into Canarese,* by S. AROKEUM PILLAY, 2nd Dresser, Medical Establishment, Mysore Commission. Bangalore, Mysore Government Press, 1865. Pamphlet, pp. 34.

WE are always glad to hear of Native Medical Subordinates doing their best to disseminate amongst their fellow-countrymen sound views of disease, its prevention and its cure; and we think that, in these days of the establishment of Mofussil Municipal Commissions, Native Surgeons and Dressers might do good service by publishing in their own language, simple little tracts or treatises on the principles of Hygiene and the details of Sanitation. This alone would not be of any great avail at present, but if combined with their own *example,* we might hope that in the course of years something of the ignorance and a good deal of the apathy and indifference which now prevail might be removed.

Great credit is due to Second Dresser Arokeum Pillay for the design he had in view when he set about the task of endeavouring to make known amongst the inhabitants of Mysore and Canara, the virtues of Vaccination, as preventive of such a dire disease as Small-pox. The author tells us in his preface that the Canarese dialect is "not his own tongue, yet he has endeavoured to produce a free and idiomatic translation." Our total ignorance of Canarese puts us out of position to judge whether he has or has not succeeded in his endeavour; but we feel bound to say that if his translation is not more idiomatic than his English, he must have signally failed. The preface concludes as follows:—

> "Finally, it is essential that every Vaccinator and Talook Official should have a copy of this Treatise, for the better understanding and discharge of their responsible duties, and persuade the villagers and their children to submit the operation." (Sic.)

The pamphlet contains not only the Canarese translation but also the English text. We do not know what peculiar process Dr. Maclean's Treatise may have undergone in its modification, adaptation, and translation, but we suspect that the Professor of Military Medicine at Netley, would scarcely recognize the Treatise in its present shape, and we are certain that, if any of its lineaments did seem somewhat familiar, he would not be bold enough to father the bantling.

The eruption of Small-pox is designated as "small burning pimples"; "the matter of the pimple" is spoken of,

although subsequently it is explained that the matter is contained in pustules.

We meet with the following sentence :—

"Since the introduction of Small-pox, the benefit derived by the prevention will D. V. be described."

And, again, under the head of Vaccination we are informed :—

"This is a term derived from Latin, it was originally vacca, which means a cow, vaccination implies that it was taken from a cow, because the matter used as a preventive for small-pox, was taken from that animal in the beginning.

From the disease being taken from an animal and applied to the human being, it prevents the disease of small-pox. This has been approved of by physicians and written in their books."

And, further on, we are told that the redness around the vaccine vesicle, "from the 11th day begins to decrease, fades and gets the colour of the skies." After this, it is not surprising to find that the readers are recommended to "consider the examples here written, and *first vaccinate the males and females, and then their household servants,* from the practice of which small-pox will be prevented."

We would strongly recommend Dresser Arokeum Pillay, and all who, like him, are anxious to inform their fellow-countrymen on such subjects, to first secure the opinion of some one qualified to judge as to the character of the "treatise" which he or they purpose to translate. It seems to us that translations of ill-written and inaccurate books are as likely to do mischief as they are to do good.

PART III.

MEDICAL MISCELLANY.

No. 1.—*Cases from the Journal of the Native Infirmary, Madras, with Remarks.* By W. J. VANSOMEREN, M.D., Surgeon, 1st District.

EVERY hospital physician has found that occasionally he gets a *run* of cases of some one disease or other—a disease not only non-epidemic, but one for whose frequency at the time it is difficult, and even impossible, satisfactorily to account. In illustration of this statement, I may point to several cases of Ischuria, which have recently, within a short period, sought admission into the Native Infirmary. And by *Ischuria*, I do not mean *suppression* of urine, the *Ischuria renalis* of our old nosology, but *retention* of urine, dependent, in the cases under consideration, on other causes than stricture, and which, in the present nomenclature of diseases, it is necessary to include under the generic designation of *Ischuria.*

12*th February*.—Rajantharum, aged 30, admitted in the crisis of retention last night. Contracted Gonorrhœa fifteen days ago. A number 7 catheter passed last night and this morning, was obstructed about the root of the penis. Bowels opened by injection last night. No fever, some scalding on micturition.

℞. Liq. Potassæ ♏ xx.
Vini. Antimonialis ♏ x.
Tinct. Camphoræ Co. ♏ xx.
Aquæ puræ. ℥ i. *M.*
Ter in die sum.

13*th*.—Number 8 introduced this morning.

19*th*.—Urine free and passed easily, no urethral scalding, but some discharge; urine, alkaline.

Omit mixture.

20*th*.—Left hospital with perfect control over the bladder.

The obstruction noted in the first day's report on this case was little more than a hitch, which was easily overcome by

a little patient manipulation. It probably depended on some spasmodic action of the urethra at the point indicated, an action encouraged by the morbid condition of the mucous membrane of the passage, with which the want of control over his bladder by the patient was also connected.

12*th February*.—Thannapillay, aged 40, admitted (yesterday) in the crisis of retention, and relieved by the easy passage of number 6. Previously he attended two days for similar relief. Cause of retention apparently paralysis of bladder. Bowels opened freely by medicine.

Chalybeate pill.
Number 8 to be used *pro re natâ*.

13*th*.—Number 8 used this morning, and I think there is certainly a stricture at the back of the spongy portion. Urine alkaline and ammoniacal and turbid.

℞. Diluti Nitrici Acidi ♏ x.
Tinct. Hyoscyam. ʒ i.
Decoct. Pareiræ Bravæ ℥ iv.
M. Thrice daily.
Cont. Chalybeate pills.

20*th*.—Left hospital with entire control over his bladder.

The Chalybeate pill prescribed in this case is a Hospital formula, composed of Nux Vomica gr. ii., Sulphate of Iron gr. i., and Extract of Henbane grs. ii., and administered thrice daily.

With regard to the opinion, hazarded in the report of the 13th February regarding the existence of a stricture immediately behind the spongy portion (bulb) of the urethra, it is only necessary to bear in mind the existence at this point of the *compressor urethræ* to render it most probable that the constriction was spasmodic in this case also, a conclusion corroborated by the subsequent rapid improvement and recovery of the patient.

15*th February*.—Ramasawmy, aged 25, passing his urine in a small stream since a recent attack of Gonorrhœa. Bowels open; tongue clean.

16*th*.—Urine retained yesterday, and bladder relieved by catheterism (number 7). Bowels open; no urine since last evening, and bladder now distended. Number 8 easily introduced, and bladder emptied; urine alkaline and turbid.

17*th*.—Pareira Brava mixture. Chalybeate pill after meals.

19*th*.—Patient still needs the daily use of catheter.

Continue.

22*nd.*—For the last three days patient's control over bladder has been improving till now it is complete.

Continue.

24*th.*—Doing well.

Continue.

26*th.*—Urine clear. Control over bladder complete. Discharged to Dispensary.

In this instance, as well as in the first case, one cannot but associate the want of vesical power with the morbid condition of the urethra produced by a recent attack of gonorrhœa.

25*th February.*—Aurokeum, aged 35, admitted (on the 24th) in the crisis of retention and relieved by the introduction of a number 8 catheter, which was used in the morning, and number 7 in the evening. Rose twice at night to pass water, and did so freely. Bowels freely opened by a dose of medicine, and an opiate (Tincture Opii. ♏. xl.) was given last night, after a warm bath.

26*th.*—The urine being turbid yesterday, patient was prescribed the Pareira Brava mixture ; he passes water without assistance.

Continue mixture.

1*st March.*—Left Hospital well.

The turbid and unhealthy condition of the urine in this case suggests the idea that the want of power over the bladder was dependent upon irritation of the vesical mucous membrane itself.

10*th March.*—Shaik Nattal, aged 46, admitted with retention of urine ; relieved yesterday by catheterism, and though the secretion dribbles away occasionally, the bladder undergoes distention from inability to empty it. Number 7 passed in easily this morning.

Chalybeate pill thrice daily.

12*th.*—Passes urine without assistance, and there has been no dribbling since day before yesterday. Complains of vomiting of food. Bowels relaxed ; tongue clean.

Continue.

℞. Tinct. Catechu. ℨi.
Decost. of Log-wood ℥ii.

Ter in die.

14*th.*—Discharged well.

This is the only case presenting what French Nosologists term *Retention avec regorgement,* the urine dribbling away

from a full and over-distended bladder which had lost completely the power to expel its contents. Its occurrence in the eldest of the five patients was what might have been expected, and points to age as probably the principal operative cause in bringing about the result.

In all the foregoing cases catheterism doubtless constituted the most efficient therapeutic means, but I cannot help connecting the rapid restoration of power in all with the auxiliary medicinal treatment prescribed according to the somewhat various indications of the different cases.

No. 2.—*Extract from Annual Medical Report on the state of the Civil Dispensary, Chittoor, North Arcot, for the year* 1865. By Assistant Surgeon W. F. DEFABECK.

A VERY interesting case of penetrating wound of the abdomen was admitted. A boy, aged 9 years, tending a herd of cattle, was gored by a bullock at a village distant two days' journey from Chittoor. He was wounded to the right of the hypogastric region, and a portion of the ileum two feet in length protruded after the accident. The boy's parents endeavoured to obtain aid in the neighbourhood; failing in this, the child was brought to Chittoor, arriving three days after the accident. He was admitted suffering intense pain, with an expression of despair. He was in high fever and extremely restless. The protruding bowel was found, on careful examination, to be so highly inflamed and in some parts gangrenous, that its return must have been fatal to him. The child was accordingly kept under the influence of opium, a large and light poultice being applied at the seat of injury. Nutritious diet with brandy in small and frequent doses as required was given. The constant and great care which this case required and obtained at the hands of 1st Dresser Chatter Sing are deserving of special mention. Under less favourable circumstances, but for this, the boy must have died; whereas the case turned out most satisfactory. The boy was relieved of pain, his anxiety of mind abated, fever subsided, the efforts of nature to throw off the decomposed portion of the bowel proved sufficient under the aid afforded them, and I was able to cut away the whole of the protruding portion, leaving a very small slough at each extremity (to prevent unnecessary hæmorrhage); this shortly cleared away, leaving the respective ends of the bowel sound and granulating. The contents of

the bowel above the seat of injury were passed out from the upper extremity, which protruded about half an inch from the wound: the contents of the large intestine, &c., below the seat of injury being voided per ano. I endeavoured a short time afterwards, as the child had much improved and was gaining flesh, to promote union between the two ends of the bowel. The edge of each extremity being pared off, the raw surfaces were brought carefully into apposition by sutures quarter of an inch apart, the termination of the upper and lower portions being, with the cut ends of the thread, turned inwards. For a while the stitches held the parts together, but I had the mortification of seeing them gradually make their way through the tissues, and all hope of union was (for a time only I trust) lost. The child continuing to make good progress, all inflammatory action having ceased I considered it advisable to send the boy to his village; his parents being desirous also of returning, on my informing them that for some time at least I would not interfere with the hope of benefit; and the child is to be brought in again, when I hope to re-unite the upper and lower portions should there be anything unsatisfactory in the condition of the artificial anus now existing. Regarding this case, I would beg to draw attention to the absence of extensive peritoneal inflammation at the time of the boy's arrival for treatment three days after so severe an injury, with gangrene of the bowel progressing, the very unfavourable circumstances of the accident, and the absence of that comfort and repose so essential in promoting recovery; indeed, in averting a rapidly result fatal. I have already drawn attention to the very efficient assistance afforded me by the dresser, which, under the blessing of God, most materially promoted the child's recovery.

No. 3.—*Extract from Annual Medical Report of the Civil Dispensary at Salem, for the year* 1865. By Assistant Surgeon H. D. Roberts, M.D.

There is nothing specially worthy of note in either the type of these diseases, or in their treatment. One case, however, I would record, as an illustration of Nature's unbounded resources and curative powers. A little native child, about two years old, was playing with a head of thrashed cumboo-stalk, its pastime was suddenly interrupted, and its parents' attention called to it by its cries and difficulty of breathing, impend-

ing suffocation. The parents having knowledge of its plaything, and missing it, surmised, and correctly enough, that it had been swallowed, and endeavoured by finger, &c., to get it out—in this they failed, gradually it slipt downwards into the stomach, the difficulty of breathing and sense of suffocaeation passed away, and the child seemed all right again, to promote and maintain which, a dose of castor oil was duly administered by the parents, the castor oil, however, did not bring away the cumboo-stalk. The child being seemingly perfectly well, no further notice was taken of the circumstances. About a month afterwards a small swelling made its appearance in the anterior part of the right hypochondrium, this gradually increased to the size of a hen's egg, was variously treated by the parents, and when sufficiently " ripe" was opened by a native "hakeem." Three days after this operation, something, much to the alarm of parents and hakeem, was seen to project at the opening ; unable alike either to make out or treat this new feature in the case, the child was brought to hospital, the projecting body was gently laid hold of by a pair of forceps, and gentle traction readily enough brought out something, which proved to be the " cumboo-stalk" swallowed about a month or so before ! For a few days after this, there was discharge from the side, gradually lessening, ceased, the aperture closed, and the case dismissed.

The cumboo-stalk, when swallowed, was about two and a quarter inches long and half inch in diameter; when extracted, the length was the same, but with diameter and circumference diminished, the whole stalk being covered by a viscid protecting mucous ; with the exception of the malaise experienced at the time of swallowing the stalk ; and the little local irritation attendant upon the formation of the abscess in the side, no constitutional symptoms or disturbance of any kind was experienced by the little patient, nor did the alimentary canal resent the presence of a foreign body within it.

No. 4.—*Chlorodyne a remedy for Cholera.*—The following letters have been forwarded to us by the Principal Inspector-General, Medical Department :

LETTER No. I.

FROM P. STREE RAMOOLOO NAIDOO, Cashkeeper, Great Southern of India Railway ; to the Inspector-General of

Hospitals, Madras Presidency, Madras, dated Trichinopoly, 26th December 1865.

"I beg to forward herewith a statement of people attacked with cholera during the month of December 1865, who were treated by me at my own cost; and out of the total number 32, of which 6 died, the remainder got cured.

"The medicine I gave is Dr. J. Collis Browne's Chlorodyne, which has proved a most valuable remedy for cholera.

"In the commencement I had very little faith in this remedy, but gradually it has turned out very valuable.

"There is still cholera prevailing in these villages, and I am continuing to give the same medicine.

"I beg your honor will bring this to the notice of higher authorities, so that it may be published in the Gazette of Fort Saint George, for the public information.

"I sent a copy of this statement, with letter, to the Deputy Inspector-General of Hospitals, Southern Division, at Trichinopoly."

The villages alluded to in the above letter are Aubishakaporum and Beema Naickenpolien.

The statement alluded to shows—attacks 32; cured 24; died 6; remained under treatment, 2.

Letter No. II.

From the same to the same, dated 8th January 1866.

"With reference to a Memo. received from you in answer to mine of 26th December 1865, I beg to enclose herewith an additional statement of patients attacked with cholera between 27th December 1865 and 8th January 1866 inclusive, showing the success which attended my administration of Dr. J. Collis Browne's Chlorodyne.

"The good effects which this medicine produced on the patients was so successful, that I think I will be doing an act of justice to the public in bringing the same to their notice. It at once checks the progress of the disease by administering the same on the very first motion, and when taken after a few successive motions, it does in most cases answer its purpose, though with some difficulty.

"Nor is this valuable remedy intended for the cure of cholera alone: in cases of nervous headache, dysentery, vomiting, &c., its application have done, I can say, a world of good.

"My sole reason in requesting its publication in the Gazette is merely that the natives may become acquainted of its good results, as a majority of them place little or no

faith in English medicines owing to a certain prejudice existing among themselves; and, of course, if such an advertisement (which is intended to point out its usefulness and success) appear in print, they will clearly find out the error of their superstitition of having recourse to native medicines and at once satisfy themselves with this invaluable remedy."

The second statement does not account for the two cases remaining under treatment on December 27th, but shows—attacks 20: cured 13; died 2; under treatment 5.

[We print the above as average specimens of the kind of letters which non-professional people write on medical subjects. Trichinopoly appears to be favoured with more than one amateur medical man. Not long ago there emanated from that station, what appeared to the author, a satisfactory demonstration that "*the cholera is in the milk*, Q. E. D.," and now we have the railway cashkeeper reporting a success in treatment far beyond that which is met with generally among physicians.

We presume Stree Ramooloo Naidoo does not claim any originality in the use of Chlorodyne for the treatment of cholera. In the English Medical and other Journals we meet with advertisements from various Makers of Chlorodyne, stating that "Earl Russell sent to the College of Physicians a communication received by him from Manilla, (where cholera has been raging fearfully) to the effect that of all remedies tried, Chlorodyne was the most effective. (See the *Lancet* and *British Medical Journal*, 31st December 1864.)"

In our hands the remedy has not proved of the great value in cases of true cholera which Stree Ramooloo Naidoo and the advertisers would have us believe it possesses. We apprehend the truth is to be found in the second paragraph of the cashkeeper's second letter,—if our interpretation of this somewhat obscure paragraph be correct. Chlorodyne is undoubtedly useful in diarrhœa, and if given sufficiently early in the premonitory diarrhœa of cholera (in those epidemics where this premonitory diarrhœa is present), it may and frequently does arrest this diarrhœa, and thus prevent the full development of the disease. But when serous vomiting and purging has set in, with threatened or complete collapse, and suppression of urine, Chlorodyne does not possess any special curative powers, and its administra-

tion may actually be hurtful in consequence of the morphine which enters into the composition of the medicine.

Some practical remarks upon this subject will be found in Dr. Houston's Report of the Cholera epidemic on the Upper Godavery last year. See pages 321—322 of the present Number.—ED. *M. Q. J.*]

No. 5.—*Paralysis of the Tongue. Extract from Annual Report of the Civil Dispensary, Berhampore, for the year* 1865. By Assistant Surgeon R. W. COCKERILL, dated 1st January 1866.

" THE other remarkable case was a woman sent by the Sub-Magistrate of Itchapore, for my opinion, whether she was really dumb or only pretending. Her friends said that she went out one day to the jungle in good health, but returned unable to speak. By signs she intimated that two men had caught hold of her, forced open her mouth, and put some powder upon her tongue, then holding a knife to her throat had robbed her,—she called out at first, and then lost her voice. The robbers on being found, confessed, and have been sentenced; she has no power of motion over the tongue, and can only swallow by throwing the food far back into the mouth, and pushing it with her fingers. I imagine excessive fright must have produced paralysis."

No. 6.—NOTE. By GEO. MACKAY, M. D., Surgeon Major. *Will a child, born after the mother has had Small-pox, and contracted after she has conceived, be liable to contract the disease?*

I LATELY met with a case of a child born under the above circumstances. The infant bore no marks of having suffered from Small-pox; about two months after its birth vaccination was attempted, and failed. This case might then have been recorded as others have been (vide British American Journal, February and March 1861,) to prove that the mother having suffered from the disease, the child was consequently protected. I therefore think it worthy of record that on vaccination being repeated some months afterwards, it proved successful. I also met lately with another case in an adult born under the above-mentioned circum-

stances, who bears good marks of vaccination performed in infancy, and in whom re-vaccination has lately been successful.

These instances seem to prove that vaccination should not be neglected in such cases under the idea that it will not succeed, and is consequently unnecessary.

As shown in my Memorandum, page 132, No. 11 of this Journal, persons who bear marks of having suffered from Small-pox, may be successfully vaccinated, and it may be presumed that such persons, if exposed to the contagion, would have been liable to a recurrence of the disease. Whether vaccination can protect them from such a recurrence, it would be interesting to ascertain, but in the meantime so simple a precaution should not be neglected.

No. 7.—*Case of Abscess of the Liver.* By THOMAS CROUDACE, Esq., M. R. C. S., &c., Assistant Surgeon, Madras Army.

ELIZABETH FROST, Æt. 13, a pale delicate-looking girl, of strumous habit, brought to Sunderland Infirmary, September 29th, 1853, on account of a swelling in the right hypochondriac region, over the liver; no history was recorded at this time; Ung. Iodinii. was directed to be rubbed on the part, and a mixture of soda with rhubarb ordered. The patient did not attend again, and nothing was heard of the case until November 1st, 1854, when I was requested to visit her. I then found a swelling in the epigastric region which was painful and very tender to the touch, its size about that of a walnut. Her mother stated that she had generally enjoyed good health; that, about *five* years before, she had an abscess in the right side, which was opened, and since that time she had been quite well, but there was always a fulness in that side afterwards. About a year ago, she had a fall on the right side, followed by the swelling for which she applied for relief at the Infirmary, and after using the remedies ordered at that time, she continued to enjoy her ordinary good health, never complained of pain in the part, and went about as usual, assisting her mother in domestic work, carrying burdens, &c.

The swelling in the epigastric region commenced a month before I saw her; was at first about the size of a marble, and did not cause any inconvenience, nor prevent her going

about as usual; as it increased in size, it became painful, and she suffered from lassitude, was easily fatigued by the slightest exertion, and became restless. When I saw her (on the 1st November) she complained of pain in the part; her countenance was anxious, the breathing hurried, pulse 120, appetite bad, and she had frequent rigors, followed by cold perspirations and urgent thirst.

Ordered Quinæ Disulph. grs. ii. ter die sum. and Morphia gr. 1-10th at bed time.

The swelling continued to increase in size, and became more tender, respiration became more and more impeded, and she was unable to lie on either side; on the 11th November distinct fluctuation was felt in the swelling, which had attained, at this time, the size of an orange; its margins were well defined, and its surface inflamed. A medical friend now saw the case with me, and a puncture was recommended, to which the friends of the patient objected; next day the pain was much increased, and on the 13th she died.

Post Mortem Examination 30 hours after death.

The integuments and fasciæ of abdomen were strongly adherent to, and could not be separated from, the apex of the tumour, which was found to be an abscess, containing more than half a pint of yellowish pus, without fœtor; the sac of the abscess was formed by the integument, and the parietal layer of peritoneum; it was situated over the lobe of the liver, about an inch to the left of the longitudinal fissure, but separated from the hepatic substance (with which it had no communication) by the posterior surface of the sac which adhered to the liver; it extended upwards towards the diaphragm; the liver was much larger than natural and universally congested; the *left* lobe presented no abnormal appearance beyond congestion. The *right* lobe, much enlarged, and congested, was occupied at its lower free border by an abscess, which extended from the margin of the longitudinal fissure, to the middle of the lower free border, and spread upwards and backwards through half the extent of this lobe; it contained more than a pint of pus, which, like that contained in the superficial abscess, was of a yellowish colour, and without smell.

The *Pericardium* was enormously distended, extending upwards to a level with the upper margin of the second left rib, and contained serum, with fibrinous coagula floating in it; the inner surface was reddened; the anterior surface of

the *heart* was of a bright pink colour and mottled with patches of fibrine, in fact, resembling honeycomb; the endocardium and valves were healthy. The *lungs* presented no abnormal appearance.

Remarks.—Abscess of the liver is not commonly met with in England, especially at so early an age as in this case. Nearly all writers have noticed the circumstance that an abscess may form in the liver and continue for a long time without giving rise to any symptoms of disease in that organ. Dr. Budd, in his work on Diseases of the Liver, remarks, "When an abscess in the liver has become encysted, if small and deep seated, it causes but little constitutional disturbance, and provided it remain stationary, the patient may enjoy even tolerable health for years." These remarks are well illustrated in the present case; where all symptoms referable to hepatic disease were absent, there was no complaint of pain even after the fall on the side; from the time that I first saw the patient no fulness could be detected in the situation of the organ; there was no jaundice; no pain in the shoulder which has been stated to be a sign of hepatic abscess; there were none of the sympathetic symptoms usually described, such as vomiting, diarrhœa, cough; nothing, in fact, to lead to a suspicion of disease in the liver; the patient continued apparently in good health, and was able to undergo considerable exertion from the time of her fall, till the formation of the swelling in the epigastric region. At the time that she fell the liver probably sustained injury to a greater or less degree, followed (in a scrofulous subject) by a slow inflammatory action, which gradually led to the formation of abscess, without, however, causing any constitutional disturbance. In regard to the abscess in the epigastric region, it is an interesting circumstance that no communication existed between it and the abscess in the liver, the swelling was situated over the left lobe of the liver, about an inch below the ensiform cartilage, the hepatic abscess occupied the substance of the right lobe. Another interesting point is the supervention of pericarditis, no doubt, from extension of inflammatory action to the diaphragm in the immediate vicinity of the posterior wall of the sac, and from thence communicated to the pericardium where it is in contact with the pleural surface of the diaphragm.

No. 8.—*Extracts from the Medical Journals of the General Hospital, Madras.* By W. N. CHIPPERFIELD, Acting Physician, General Hospital, and Professor of Medicine and Clinical Medicine, Madras Medical College.

Cases of Acute and Subacute Dysentery.

No. I.—D. M., Seaman, age 25 years.

A robust European, of sanguine temperament, and temperate habits.

2nd September 1865.—Admitted late last night, complaining of having had dysentery for several days. The bowels were moved several times last night, the stools are semifluid, bilious feculence, mixed with blood and mucoid exudation. Has pain on pressure in both iliac regions, with some gurgling in the cæcum, and is also very tender over the transverse colon. Has not much straining when at stool. Tongue white in centre, red-edged, moist; pulse firm and full; skin rather warm; urine scanty. Says he had fever yesterday evening.

℞. Olei Ricini ℥ i.
Aquæ Menthæ pip. ℥ i. To be taken directly.
Milk diet.

3rd.—Had fever again last evening, without rigors but with profuse perspiration. An opiate enema was given and he slept pretty well. Is now free from fever. Bowels moved several times yesterday, stools same, but contain less blood; tongue foul; pulse soft, moderately full; skin of normal temperature; urine scanty.

℞. Pil. Hydrargyri gr. v.
Pulv. Ipecac. c̄ Opio gr. v. *M.*
fiant Pilulæ ii. Thrice daily.

4th.—Slept pretty well, had very slight fever last evening. Bowels moved four times, stools of same appearance. Complains of much pain in the abdomen, which is tender to pressure. Tongue red-edged, moist; pulse same.

Milk diet with one pint mutton broth.
℞ Mucilag. Acaciæ ℥ ii.
Tinct. Benzoini Comp. ♏ xx.
— Opii ♏ x.
Aquæ. Cinnamomi ℥ iss *M.* thrice daily.
Turpentine stupe to abdomen.

5th.—Doing well. Four stools, free from blood and exuda-

tion. Has a little pain in the rectum. Tongue clean; pulse soft, full. No fever.

Low diet.
Continue medicine.

℞ Ipecac rad Contrit. ℈ i.
Tinct. Opii. ♏ xx.
Decocti. Amyli. ℥ ii. *M.* ft. Enema.

To be administered if the pain continues.

6th.—The enema was given at bed time. Slept well. Free from pain. Bowels moved thrice; stools yellow feculence, more formed; tongue clean; pulse soft, of fair strength; urine normal in quantity and appearance.

Continue mixture.

7th.—Improving. Bowels moved once, stool half-formed. No pain.

Continue.

8th.—Doing well, one healthy stool. No complaint.

Continue.

9th.—Well of the dysentery. Feels a little weak.

Omit medicine. Half diet.

11th.—Still feels weak and not quite fit for work.

Full diet. 4 oz. Sherry.

14th.—Quite well. Discharged to duty.

No. II.—R. F., Pensioned Private, aged 42 years.

A European of sanguine temperament and temperate habits.

22nd September 1865.—Admitted complaining of griping pains in the bowels, with frequent calls to stool. Has much tenesmus, and passes only small quantities of mucoid exudation mixed with blood. Pulse firm, moderately full; tongue coated with a yellowish fur.

℞. Tinct. Opii ♏xx.
Aquæ font. ʒii.
To be given directly.
Sinapism to epigastrium.

℞. Pulv. Ipecacuan ℈ii.
Syrupi ʒii. *M.* fiat Bolus
To be given in half-an-hour.
Milk diet.

Vesperi.—Moderate emesis occurred after taking the ipecac; feels much easier now as regards the abdomen, but

still has severe pain in the rectum. Bowels moved copiously twice, stools semifluid with a quantity of blood and exudation.

℞. Ipecac. Rad. Contrit. ℈ i.
Tinct. Opii. ♏ xx.
Decocti. Amyli ℥ ii. *M.* ft. Enema.
To be given at bed-time.

23*rd.*—Slept well. Bowels moved thrice this morning, stools much improved in character; tongue nearly clean, moist; pulse soft, moderately full; has some pain in rectum.

℞. Hydrarg. c̄ Creta gr. v.
Pulv. Ipecac. c̄ Opio gr. v. *M.* ft. Pulv.
To be taken thrice to-day.

24*th.*—Slept well. Bowels moved several times; stools semi-fluid and clay-coloured, contain a little mucous and blood; pulse weak; tongue red.

℞. Podophylli gr. i. in syrup directly.
Omit Hydrarg. c̄ Creta. Continue Pulv. Ipecac. c̄ Opio.

25*th.*—Bowels moved several times; stools bilious; dark feculence, no blood. Has still a little tenesmus and tormina when at stool; tongue clean, pale; pulse 96, soft, weak. Slept badly.

Low diet. No medicine to-day.
Opiate suppository at bed-time.

26*th.*—Much better. Slept well. Three semi-consistent healthy stools; no pain in bowels; pulse weak.

Half diet without potatoes.
6 oz. Port wine.

27*th.*—Feels quite well. Bowels natural, wishes to be discharged.

No. III.—*Case reported by Student Rungasawmy.*

A. McK., an East Indian pauper, aged 65 years.

22*nd September* 1865.—Admitted stating that he has been suffering from dysentery for several days. Has pain and tenderness in the left iliac region, with griping and straining whilst at stool. Tongue pale and moist, somewhat furred at base; pulse soft, weak; no fever.

Spoon diet. To be watched.

Vesperi.—Has had several stools, consisting of blood and mucus without feculence.

℞. Pulv. Ipecac. ʒ ss.
Tinct. Opii. ♏. xx.
Decocti. Amyli. ℥ ii. *M.*
ft. Enema at bedtime.

23rd.—Slept well, but the bowels have been moved three times, stools semi-fluid, yellow, no blood or mucus ; tongue cleaning, moist ; pulse 60, weak.

Low diet.
℞. Hydrarg. c̄ Creta gr. v.
Pulv. Ipecac. c̄ Opio gr. v. *M.*
ft. Pil. ii. thrice daily.

24th.—Bowels moved thrice, stools semi-fluid, clay coloured. Very little pain in abdomen ; tongue clean ; pulse of good volume and strength.

Continue.

25th.—Doing well. Bowels moved scantily once, stool scybalous. Says he has slight pain in abdomen.

℞. Olei Ricini ℥ i. directly.

26th.—Improved. Oil acted copiously twice, no blood or mucus. Tongue clean. Pulse steady.

No medicine. Half diet.

28th.—Quite well. Discharged.

No. IV.—*Case reported by Student Hoosman Khan.*

D. G., a pensioned Sergeant, aged 45.

A robust European of sanguine temperament and temperate habits.

26th September 1865.—Admitted yesterday evening, stating that he had been ailing from dysentery for several days. Has very frequent calls to stool with much straining. Has pain on pressure over the whole course of the colon. Tongue thickly coated, moist ; pulse 90, full and firm ; skin moderately warm ; stools consist of blood and mucus only,

℞. Pulv. Ipecac ℈ i. in bolus now.
Milk diet.

37th.—Slept well. Bowels moved but thrice since taking the ipecac. The stools are semifluid, yellow feculence, no

blood or mucoid exudation. Tongue cleaning, moist; pulse soft, of good strength. Has some pain in the abdomen.

℞. Hydrarg. c̄ Creta gr. v.
Pulv. Ipecac. c̄ Opio gr. v. *M.*
ft. Pulv. to be taken thrice daily.

28*th.*—Says he is much better: bowels moved four times, stools semifluid, clay-coloured feculence, mixed with some glairy mucus. No pain in abdomen. Tongue clean; pulse 84, soft, rather weak.

Repeat.

29*th.*—Improving. Two stools, more natural. No pain in abdomen. Wants some solid food. Tongue clean; pulse normal.

Half diet.
℞. Sp. Ammon. Aromat ♏ xx.
Infusi Chirettæ ℥ ii. *M.*
thrice a day.

30*th.*—Not nearly so well; slept badly, and had several stools in the night, with slight griping and much straining. The stools are principally ulceration-shreds and exudation mixed with blood. Tongue clean but fissured; pulse 90, soft and weak.

Low diet.
℞. Pulv. Ipecac ℈ i. in bolus now.
℞. Pulv. Ipecac ʒ ss.
Tinct. Opii. ♏ xx.
Decocti. Amyli ℥ ii. *M.* ft. Enema.
to be administered thrice.

1*st October.*—Slept pretty well. Bowels not moved so frequently, stools fluid, yellow feculence, still mixed with blood and exudation shreds. Tongue and pulse as before.

Repeat as yesterday.

2*nd.*—No improvement. Bowels frequently moved, stools chiefly gelatinous mucus and blood. Has much pain and straining. Pulse very soft.

Repeat.

3*rd.*—Bowels moved four times; stools semifluid, yellow feculence, with a quantity of sanious gelatinous mucus at the bottom of the vessel. The pain and straining continue. Has not much nausea from the ipecac.

Repeat.

4th.—Better. Bowels moved thrice, no mucus or blood. Pulse 80, soft; tongue chapped, clean.

No medicine.

5th.—Improving, but has some warmth of skin and a little griping pain.

℞. Liq. Ammon. Acet. ʒ ii.
Vini Ipecac. ♏ xx.
Tinct. Opii. ♏ x.
Aquæ font. ℥ ii. *M.* thrice daily.

6th.—Improving. Two healthy semi-consistent stools. Skin cool; pain gone.

Repeat.

8th.—Doing well. But complains still of griping. Three stools, said to contain mucus but no blood.

℞. Tinct. Benzoini Co. ♏ xx.
Tinct. Camphoræ c̄ Opio ʒ i.
Mist. Camphoræ ℥ iss. *M.* thrice a day.

9th.—Very much better. Stools natural. Feels weak.

Full diet, no potatoes.

11th.—Quite well. Discharged.

No. V.—*Case reported by Student Anantheram.*

C. F., Ship's carpenter, age 31 years.

A European of temperate habits and sanguine-nervous temperament.

3rd October 1865.—Admitted complaining of having been ill from dysentery for the last eight days whilst on voyage from the Mauritius. Has general griping pain in abdomen, but no fixed tenderness on pressure. Says he has not passed any blood the last two days. Bowels have been moved four times since admission this morning; stools semifluid, varying in colour from bright yellow to almost black. Had a dose of castor oil yesterday. Tongue clean; pulse 76, full, firm.

Low diet.

Ipecac. and Opium Enema at bed time.

℞. Tinct. Benzoini Co. ♏ xv.
— Camphoræ Opio ʒ i.
Mucilaginis Acaciæ ʒ i.
Aquæ Cinnamomi ℥ iss *M.* thrice daily.

4th.—Feels much better. Bowels moved much less frequently; stools of more natural appearance, but still relaxed.

Continue.

7th.—Doing well. Bowels moved thrice, stools half-formed, healthy. Tongue clean; pulse soft, rather weak.

Continue.

6th.—Improving steadily. Omit medicine. Half diet.

7th.—Feels pretty well, but asks for the mixture as the bowels have been relaxed thrice. Tongue and pulse normal.

Continue Benzoin mixture.

8th.—Better. Two stools, nearly natural. No pain in abdomen.

Continue.

10th.—Doing well. One stool, natural. No pain; tongue and pulse natural. Begs the mixture may be continued.

Continue.

12th.—Progressing very favorably. Full diet. No medicine.

15th.—Says he had a great deal of pain last night. Bowels not moved yesterday, but had one rather costive stool in the night. Tongue clean; pulse normal.

℞. Olei Ricini ℥ i. directly.

16th.—Oil acted twice; says he is quite well and free from pain to-day.

No medicine.

18th.—Quite well. Discharged.

No. VI.—P. B., Seaman, aged 36 years.

A German of bilious temperament and rather free habits.

23rd October 1865.—Admitted last night complaining of profuse diarrhœa attended with much straining and severe pain in rectum. Had an ipecac and opium enema on admission, and again at 10 P.M. Had several stools during the night; they are fluid, light brown, and contain blood. Has no fixed pain in abdomen, but is much griped at times. Pain in rectum so severe that he sits on the cot with a pad pressed firmly against the anus. Tongue morbidly red,

moist; pulse a little hard, was much nauseated by the enemata. Is subject to relaxed bowels.

℞. Tinct. Kino Co. ʒ i.
— Catechu ʒ i.
Mist. Camphoræ ℥ ii. *M.* thrice daily.
Milk diet.

24*th.*—Bowels moved several times, stools semifluid, yellowish feculence, very slightly tinged with blood. Pain in rectum and straining still severe. Tongue dusky, moist; pulse 90, soft, moderately full; skin cool.

To take a dose of Tinct. Opii. now,
And a bolus of ʒ ss. Pulv. Ipecac at 10 A.M.

Vesperi.—Still suffering in the same way.

Repeat the dose.

25*th.*—Had much pain in the night and did not sleep. Bowels moved very frequently but scantily, no blood. Tongue clean, pulse soft, weak. Complains of a sense of weight, and as if a large ball were lodged in the rectum.

℞. Olei. Ricini ℥ i. directly.

26*th.*—Slept badly. Oil acted frequently but stools very scanty, with a little blood. Has very severe pain in the rectum and much tenesmus. Tongue clean, pulse 80, small and soft; skin warm.

Ipecac. and Opium enema directly.
℞. Liq. Ammon Acet. ʒ ss.
— Quinæ Amorph. ♏ xv.
Mist. Camphoræ ℥ i. *M.* thrice.

Vesperi.—The quinine was prescribed as it appeared that there was a periodicity in his disease;—the purging being generally at night. Is feeling very unwell from pain and want of rest.

Two grains of opium as a suppository.

27*th.*—Slept well for four hours. Bowels moved frequently since 2 A. M. No blood in the stools, which consist of semifluid brown feculence. Says he has prolapse of the rectum every time he goes to stool. There is much firmness around the anus as if the bowel were thickened. Tongue clean; pulse 80, soft.

℞. Tinct. Benzoini Co. ♏ xv.
— Camphoræ c̄ opio ʒ i.
— Kino Co. ʒ ss.
Syrupi ℥ ss. every four hours.

28th.—Better, less pain and straining. Three stools, less relaxed.

Continue.

30th.—Doing very well, but feels weak. Pain much less, puts on quite a pleased expression now. Pulse 74, small and soft; bowels moved twice, character of stools much improved.

Continue.
Low diet. 4 oz. Sherry.

1st November.—Improving steadily. Scarcely any pain in rectum. Bowels still relaxed three or four times early in the morning.

Repeat mixture.

℞. Quinine Disulph. gr. v. in pill with each dose.

2nd.—Doing well. No complaint except that he had three stools.

Repeat.

4th.—Improving. Continue.

6th.—Says he is quite well. One stool, relaxed. Continue.

10th.—Has a relapse. Had a great deal of straining and pain in rectum last night. Bowels moved very frequently but scantily, a little blood in the stools.

Continue mixture and Pills.
An Ipecac. and Opium enema at bed time.

11th.—Less pain, but bowels moved very frequently and the prolapse of the rectum has recurred. Tongue clean; pulse of fair strength.

Repeat.
Add Alum gr. v. to enema and give twice a day.

13th.—Doing well, bowels moved less frequently; stools feculent, semi-consistent. No pain in rectum. Tongue clean. Pulse soft and full.

Omit medicine.
Repeat Enema morning and evening.

14th.—Improving. Stools half formed, healthy.

Continue.

15th.—Says he is quite well, but feels a little weak.

Full diet. No medicine.

16th.—Bowels moved several times last night, some pieces of undigested meat and potatoes in stool.

To have a dose of oil.

17th.—Oil acted well. Feels weak but otherwise well.

To have tonic doses of Quinine.

18th.—Feels well.

20th.—Quite well. Discharged.

No. VII.—J.B., Seaman, unemployed. Aged 21 years.

A German of leucophlegmatic temperament, and temperate habits.

25th October 1865.—Transferred from the Surgical ward with Dysentery. Bowels moved several times, stools healthy feculence, partially covered with mucous tinged with blood. Says he has much tenesmus and pain in rectum when at stool. No abdominal tenderness.

Milk diet.
An Ipecac and Opium enema directly.
℞. Olei Ricini ℥ i. in an hour's time.

26th.—Slept well. Bowels not moved so frequently, stools relaxed from the oil, a little blood. Pain and tenesmus continue. Had a febrile attack last night. Lately suffered from quotidian fever. No hepatic or splenic enlargement.

℞. Tinct. Benzoini Co. ♏ xv.
——Camphora c̄ Opio ʒ i.
Liq. Quinæ amorph ♏ xv.
Syrup ℥ ss. thrice daily.

27th.—Says he feels better. Had an Ipecac enema last night. Bowels moved nine times, stools formed healthy feculence, not scybalous, followed by a small quantity of mucus and blood. Has been examined for hæmorrhoids and has none. Tongue partially covered with a yellowish fur. Pulse very soft.

Continue medicine.

28th.—Much the same, but has less pain in rectum. Nine stools of same character. Tongue pale and expanded. Pulse feeble.

Continue. Repeat enema.

30th.—Feels much better. Slept well. Bowels less fre-

quently moved, no blood. Tongue same. Pulse 90, soft, of fair strength.

Repeat.

1st November.—Was not so well last night, and had two scruples of ipecac in bolus. Bowels moved several times, stools contain some blood. The ipecac sickened him, and he is feeble this morning.

℞. Pil. Hydrargyri gr. iii.
Pulv. Ipecac. gr. ii. *M.* ft. pil. thrice daily.
℞. Ext. Opii. gr. ii.
Zinci Sulph. gr. x.
Aquæ ℥ iii. *M.* ft. Enema.
To be given at bedtime.
Low Diet.

2nd.—Doing well. Says he is much improved. Bowels moved thrice, healthy feculence, with just a trace of blood. Tongue and pulse normal.

Continue.

3rd.—Very much improved. Bowels moved naturally once.

Omit medicine. Half diet.

4th.—Discharged at his own request.

No. VIII.—R. W., Student Civil Engineering College. Age 18 years.

A European of phlegmatic temperament, and temperate habits.

27th November 1865.—Admitted complaining of feeling very weak and ill from dysentery. Bowels moved frequently in the day, with much pain and straining. Stools semifluid, with a little blood and exudation shreds.

Has pain on pressure in the left iliac region. Tongue a little furred; pulse soft, full; skin warm.

Milk diet. Ipecac. ℈i. in bolus, now.

28th.—Says he feels much better. Bowels moved three times; stools relaxed, but otherwise natural. No pain. Tongue and pulse normal.

Full diet. No medicine.

29th.—Well. One natural stool.

30th.—Quite well. Discharged.

No. IX.—D. M., Seaman, aged 31 years.

A stout, able-bodied Swede, of sanguine temperament and abstemious habits.

13th December 1865.—Admitted last evening with acute dysentery of four days duration. Has had numerous stools containing large quantities of blood and mucoid exudation, passed with much griping and straining. Tongue foul, red-edged; pulse 110, full; skin hot and dry. Has no appetite and feels very weak.

Spoon diet. A large warm water enema directly.
℞. Ipecac. ʒ ss. in bolus preceded by Tinct. Opii. ♏ xx.
Sinapism to abdomen.

14th.—Vomited several times after the ipecac. The pain is not so severe, nor the calls to stool so frequent, but he is still passing large quantities of blood and albuminous exudation. Has still a good deal of febrile heat.

Turpentine stupes to abdomen.
Repeat Ipecac. ℈ ss. now.
Ipecac. and Opium enema at bedtime.

15th.—Very much nauseated, but feeling much better. Free from fever. Evacuations less frequent, more feculent, small quantity of blood. Pulse 80, soft; tongue clean.

℞. Pil. Hydrargyri gr. iii.
Pulv. Ipecac. gr. ii.
Pulv. Ipecac. c̄ Opio. gr. v. *M.* ft. Pil. ii. thrice.
℞. Tinct. Opii. ♏ xxx.
Mist. Camph. ℥ iss. at bedtime.

17th.—Much better, stools becoming formed, free from blood.

No medicine. Half diet.

20th.—Not quite so well. Is griped occasionally, and the stools are again loose and mixed with blood and mucus.

Ipecac. and Opium Enema at once.
℞. Tinct. Benzoini Co. ♏ xx.
— Opio. ♏ x.
— Kino. Comp. ʒ i.
Mucilaginis Acaciæ ʒ ii.
Aquæ Cinnamomi. ℥ iss. *M.*
every four hours.

23rd.—Better, but still relaxed and passes some mucus and blood if he omits the medicine.

Continue mixture twice a day.

27th.—Is much better, but occasionally is slightly purged. Thinks meat disagrees with him.

Soup diet. Continue mixture.

30th.—Doing well. Stools relaxed but otherwise natural. Appetite indifferent, suffers from flatulence after eating. Tongue expanded, pale; pulse soft, weak.

Low diet with pudding.

℞. Acidi Nitro-Hydrochlorici Diluti. ♏ x.
Tinct. Opii. ♏ x.
— Kino. Co. ♏ xxx.
Infusi Chirettæ ℥ iss. *M.* thrice daily.

3rd January 1866.—Is daily getting stronger and better. Appetite improved. Bowels inclined to be relaxed.

Continue.

7th.—Well, but a little weak.

Omit Opium and Kino. Continue Acid and Chiretta.

15th.—Quite well. Discharged.

No. X.—R. B., Mate of a ship, age 34 years.

A moderately stout man, of sanguine temperament, and temperate habits. Generally enjoys good health.

16th December 1865.—Admitted yesterday evening complaining of having suffered for the last five days from dysentery. Has very frequent calls to stool, with severe griping and most distressing tenesmus. Evacuations consist of little else than blood and mucoid exudation. Pulse 100, full and firm; tongue foul and red-edged; skin hot and dry; urine scanty and high coloured. Says his disease was caused by " very bad food."

Farinaceous diet. Hot bath.
Bolus of Ipecac. ʒss. preceded by Tinct. Opii. ♏ xx.
Turpentine stupes to abdomen.

17th.—Says he feels much the same. Still has some febrile action, but the skin is moist. Emesis profuse after the bolus. Stools of same character.

Repeat Ipecac. twice, and Turpentine stupes.

18th.—Had frequent calls to stool yesterday, but passed no feculent matter whatever, nothing but " slime and blood." Has less griping and straining. Pulse 84, soft; tongue still foul; urine free.

℞. Olei Ricini. ʒvi. directly.

19th.—Oil has acted freely; stools free from blood and mucus, frothy, fermenting and deficient of bile. Tongue cleaner.

℞. Pil. Hydrargyri gr. iii.
Pulv. Ipecac. c̄ Opio. gr. v. *M.*
ft. Pil. ii. to be taken thrice.

20th.—Very much improved. Stools three, semiconsistent feculence.

Continue.

21st.—Says he is well and wants to rejoin his ship. Bowels regular. Appetite good. Has some pain in epigastrium with flatulent distention of the bowels.

℞. Rhei Rad. Conrit. ℈ i.
Soda Carbonatis gr. xv.
Pulv. Zingiberis gr. x.
Aquæ Cinnamom ℥ iii. *M.*
to be taken directly.

22nd.—Draught acted twice. Says he is quite well, and is so anxious to repair to his duty that he is discharged.

No. XI.—C. T., Seaman, aged 25.

An Englishman of sanguine temperament, and temperate habits.

18th December 1865.—Admitted at noon complaining of having intermittent dysentery for the last fortnight. Some days his stools are natural and on other days (not regularly alternating) they consist of nothing but "blood and slime," when he has severe griping and straining. Has not had any fever. Pulse and skin, normal; tongue foul.

Milk Diet.

℞. Ipecac. ℈ ii. in bolus preceded by Tinct. Opii. ♏. xx.

19th.—No better. Vomited once after the Ipecac, and had profuse diaphoresis. Several stools containing scybalæ and mucoid exudation in large quantity but with little blood.

Repeat Ipecac directly and again in six hours.
Large warm water enema.

20th.—Felt much relieved after the second dose. Stools very copious, semifluid and frothy, with a spec of blood here and there. Tongue cleaning. Has some griping pain in the colon.

℞. Pulv. Ipecac. c̄ Opio. gr. vi. thrice daily.

22nd.—Doing well. Two stools yesterday, more natural. No tenesmus, but a sense of weight in the left iliac fossa. Tongue clean and moist; pulse, soft and full.

Low diet.

℞. Olei. Ricini ʒvi.
Tinct. Hyosyami ʒss.
Aquæ. Menth. Pip. ℥iss *M.* directly.

24th.—Improving. Oil acted well. Stools healthy. No pain.

27th.— A slight relapse. Three stools containing a little gelatinous mucus.

Repeat Oil.

30th.—Well since last report until to-day; has had four stools this morning with much griping and straining.

Ipecac. and Opium Enema.
Repeat Oil.

2nd January 1866.—Better. Two stools this morning with slight straining.

Repeat the Oil.

3rd.—Bowels moved thrice by the medicine. Stools fermenting. Otherwise says he is well.

℞. Pulv. Ipecac. c̄ Opio. gr. v. every four hours.

5th.—Was well yesterday and put upon half diet without potatoes, and the medicine discontinued. Has had several stools this morning slightly tinged with blood. Slight tenesmus. Pulse full and firm; tongue clean. At his own request the oil is repeated.

7th.—Doing well. Bowels steady. No medicine. 2 oz. sherry twice a day.

9th.—Well up to this morning. Has had two stools relaxed and slightly tinged with blood. Is much griped and complains much of tenesmus. Says his appetite is good and he wants more food.

℞. Mixturæ Acaciæ ℥ii.
Olei. Ricini ʒii.
Tinct. Opio. ♏ xx. *M.*
A fourth part every three hours.

11th.—The oil mixture has much relieved him. Bowels more steady.

Omit medicine.

13th.—Slept indifferently and is looking distressed. Three stools in the night. Still complains of tenesmus.

℞. Tinct. Kino. Co. ʒ i.
— Benzoini Co. ♏ xv.
— Opii ♏ x.
Liq. Quinæ Amorph. ♏ xv.
Mist. Acaciæ ℥ i. *M.* thrice daily.

15th.—Improving. Very little griping. Continue.

19th.—Had a relapse on the 16th and again yesterday. Has much pain and fullness about the lower part of the rectum.

Continue mixture.
Ipecac, Opium and Alum injection.

21st.—Quite well yesterday; to-day has had three stools with much griping.

Continue mixture.

24th.—Improving steadily. Stools natural but slightly relaxed; no blood or mucus. Now free from straining and griping. Begs that his mixture may be continued.

Full diet.

29th.—Well up to yesterday, when he was called to stool frequently, and had much straining and pain. Is better now, but has just had one stool containing a little blood. Complains of flatulence.

Ipecac ℈ i. in bolus, preceded by Tinct. Opii. ♏ xx.

30th.—Has felt very well since he took the Ipecac. Had two copious stools, free from blood.

℞. Infusi Chirettæ ℥ iss.
Sp. menthæ Pip ♏ v. *M.* thrice.

31st.—Says he is well. Bowels steady; sleeps well. No griping or flatulence. Appetite good.

Continue.

2nd February.—Quite well. Discharged.

No. XII.—E. S., a Seaman, aged 19.

A robust, well-built English lad, of sanguine temperament and steady habits.

20th December 1865.—Admitted complaining of dysentery of a week's duration. Is very frequently purged, evacuations consisting almost entirely of "blood and slime." Has very distressing tenesmus, but no tormina. Has slight fever

at times. There is much tenderness on pressing in the left iliac fossa. Pulse, 100, full and firm. Tongue very foul. Skin warm and dry. Appetite bad. Urine free.

Milk diet.
Sinapisms to abdomen.
Ipecac. ℨ ss. in bolus directly.
Pulv. Ipecac. c̄ Opio. gr. xv. at bed time

21*st.*—Much better. No emesis. Four stools since taking the Ipecac; they are copious, semifluid, dark, and contain some blood, mixed with exudation shreds. Slept pretty well. Tenderness of abdomen less. Still some straining. Has slight febrile action.

Repeat the Ipecac.
Foment abdomen assiduously.

22*nd.*—Vomited frequently yesterday and perspired profusely. Bowels moved several times, evacuations semi-fluid, pale, frothy feculence, with very little blood and exudation. Says he has no pain and feels very much better. No fever.

℞. Pil. Hydrargyri gr. iv.
Pulv. Ipecac. c̄ Opio. gr. v. *M.*
ft. Pil. ii. thrice daily.

23*rd.*—Very much improved. Stools almost natural.

Continue. Low diet.

25*th.*—Bowels a little relaxed, evacuations very dark and frothy. Has no pain. Appetite voracious. No fever.

℞. Acidi. Nitro Hydrochlorici Diluti ♏ x.
Tinct. Kino. Co. ʒ ss.
Aquæ font. ℥ iss. *M.* thrice.

29*th.*—Daily improving. Evacuations still dark, and a little relaxed.

Continue.

1*st January* 1866.—Doing very well. No medicine. Full diet.

4*th.*—Quite well. Discharged.

No. XIII.—*Acute Dysentery complicated with Peritonitis.*

G. O. E., an East-Indian Pauper, aged 26 years.

A miserable, much emaciated man, very much debilitated by long continued syphilitic rheumatism.

17*th September* 1865.—Admitted last evening complain-
g of very severe pain in the abdomen, with frequent calls
stool with very much tenesmus. Said his evacuations
nsisted of nothing but blood and mucus. Had been ill
out a week. The Apothecary on duty ordered a rhubarb
aught and fomentation to the abdomen.

This morning he is looking very ill. Has a pinched, drawn
untenance, sunken eyes, and his nostrils expand and con-
act freely. He lies in bed with his legs drawn up and his
oulders raised, and his respirations are very shallow. Com-
ains of severe pain all over the abdomen, and shrinks at the
proach of the hand. Pulse rapid, very small and somewhat
rd. Tongue slightly coated, dirty white, red at tip. Skin
oderately warm and dry. Has had several small stools,
hich are yellow, semifluid and bilious, but contain no
ood.

Milk diet.

Sherry ½ oz. every two hours.

℞. Pulv. Ipecac. c̄. Opio. gr. v. every four hours.

A large piece of spongio-piline to be wrung out of hot
ater moistened with ½ oz. Tinct. Opii. and applied to the
domen.

18*th.*—Slept badly. The pain in the abdomen continues
uch the same. Bowels moved four times scantily, a little
ood and mucus.

His posture is the same but he looks less anxious. Pulse
ery small and feeble.

Milk and mutton broth at short intervals.

Sherry ½ oz. in the broth every two hours.

Repeat powder every three hours.

Continue Opiate Epithem.

19*th.*—Much the same. Pain in abdomen very slightly
etter. Slept a little. Bowels moved four times, stools clay-
loured, devoid of bile, no blood. Tongue pale, flabby,
oist. Pulse, 110, very weak. Skin dry.

℞. Podophyllin gr. i. directly.

Continue diet as yesterday.

℞. Ext. Opii. gr. i. every four hours.

20*th.*—Slept soundly. Pain in abdomen much diminished.
llows of palpation now, but is exquisitely tender. Was
leep with his legs extended this morning. Bowels moved
vice, semifluid, but otherwise healthy. Tongue red at tip,
ul at base. Pulse 100, weak and small. Skin warm and
ore moist.

Continue diet. Omit opium till evening.
℞. Ext. Opii. gr. i at 5, 8, and 10 P.M.

21*st.*—Had a very bad night. Says the pain in abdomen was very severe, but is relieved now. Looks better and breathes more deeply. Bowels moved thrice, stools semi-fluid, yellowish. Tongue cleaning. Pulse soft and more full.

Continue diet.
Large sinapism to abdomen.
℞. Ext. Opii. gr. i. 6 times in the 24 hours.

22*nd.*—Improving steadily. Pain in abdomen decreasing, lies almost straight now. Bowels steady. Tongue clean. Pulse of better volume and strength.

Continue all.

23*rd.*—Slept well. Pain much less. Is rapidly improving, wants some meat. Tongue clean. Pulse soft, weak. Bowels moved thrice, evacuations natural.

Continue Opium every six hours.

25*th.*—Doing well. Pain nearly gone. Bowels moved twice, stools semi-consistent, yellow feculence. Got out of bed and walked to the retiring room. Tongue clean. Pulse of fair strength.

Continue Opium twice a day.
Low diet with custard.
Sherry 6 oz. during the day.

27*th.*—Is well but very weak. Has no pain or tenderness. Bowels natural. Takes a little walk every day.

℞. Acidi. Nitrici Diluti ♏ xv.
Infusi. Chirettæ'ʒ ii. *M.* thrice daily.

29*th.*—Doing very well. Wants more food.

Half diet without potatoes.
Sherry 6 oz.
Continue mixture.

1*st October.*—Quite as well as he ever will be.

3*rd.*—Says he is quite well. Discharged.

No. XIV.—*Case of Peritonitis Chronica.*

W. L., a European, Pensioned Private, aged 47 years.

A well nourished man of sanguine temperament and temperate habits.

22*nd November* 1865.—Admitted last night, complaining of severe pain in centre of abdomen. Said he had had fever for several days; and had pains all over the body,

which he attributed to exposure to cold and wet. Tongue thickly coated at base but clean at edges and tip, moist. Pulse soft and weak. Bowels not moved for two days. The Apothecary on duty gave him ½ oz. of Tincture of Hyoscyamus last night and a drachm of compound Jalap powder this morning.

Beef-tea diet.

23rd.—The powder has not acted. Feels very unwell; has very urgent thirst. Pulse, soft, and weak. Tongue dry, and covered with a brown fur in the centre. Urine normal. Says he has scarcely any pain in the abdomen. Walks about the ward.

℞. Liq. Ammon. Acet. ʒ iii.
— Quinæ. Amorph. ♏ xv.
Tinct. Camph. c̄ Opio. ♏ xxx.
Mist. Camphoræ. ℥ i. *M.* thrice daily.

24th.—Bowels moved very freely. Tongue cleaner but still dry. Pulse, 90; of better strength. No fever. Less pain in abdomen. Bears palpation well, but has tenderness over the ascending colon. Appetite very bad. Urine scanty. Skin dry but soft.

Beef-tea diet with a pint of milk.
℞. Potassæ Nitratis gr. v.
Liq. Ammon. Acet. ʒ iv.
Aquæ font. ℥ iss. *M.* thrice.

25th.—Says he feels much better, and is *quite free* from pain. Looks a little exhausted. Pulse very small, rather firm. Tongue cleaning, more moist.

℞. Tinct. Cinchonæ Co. ʒ i.
Liq. Ammon Acet. ʒ iii.
Aquæ font. ℥ i. *M.* thrice.

1. P. M.—Sent for to see this patient; found him restless, and screaming with very severe pain in the bowels. Thinks the medicine disagreed with him, for, soon after taking it, felt a burning pain all over the abdomen. Is vomiting frequently, the ejected matter being a thick, ropy, green fluid. Pulse fluttering. Skin cold and covered with a clammy sweat. Diagnosis, perforation of intestine.

Sinapism to abdomen.
Tinct. Hyoscyami ʒ ss. directly.
Arrack ℥ ss. with water every hour.

5 P. M.—Sinking. In great agony. Pulse imperceptible.

Bran poultice to abdomen.
A stimulant dose every half hour.

W

Continued to suffer great agony, and expired at midnight.

Autopsy at 8-30 a. m. *26th November.*

Body stout and well nourished—sugillation of the sides and back of both trunk and extremities.

Abdomen, subcutaneous areolar tissue loaded with fat. Muscles of a very deep red color. Upon opening the peritoneum a quantity of thin opaque purulent fluid flowed out. The parietal peritoneum generally inflamed and in the iliac fossæ deeply purple. The great omentum loaded with fat, and slightly adherent to parietes. Upon attempting to raise it, it was found firmly adherent in the right iliac fossa and in fact all along its right border. It separated on gentle traction and a large quantity of pus followed—the separated edge was *in a state of sphacelus*. There was one sloughy spot also on the under surface of the great omentum and corresponding to this was a small cavity—the other wall of which was formed by a fold of intestine which was curved upon itself, adherent, and the peritoneal coat broken down into a slough.

Upon removing the small intestines it was found that the mesentery was very loaded with fat, that the peritoneal surface of the bowels was generally slightly inflamed, that lymph was poured out upon it, and had produced easily broken down adhesions between neighbouring coils. The cœcum and ascending colon were very much congested and of a deep purple colour and covered with flocculi of lymph; along the outer border was a line of sloughy tissue corresponding to the adhesion of the great omentum, and upon following this upwards and separating the right upper border of the omentum (which was firmly adherent in the right hypochondrium) a large abscess was opened, the upper boundary of which was formed by so much of the under surface of the right lobe of the liver as lies right of the gall-bladder, the external boundary being the abdominal parietes external and superficial to the colon, and the internal boundary the edge of the great omentum. The pus had escaped into the general peritoneal cavity through a circular opening near the inferior portion of the abscess. The inflammation was confined to the peritoneum, the mucous coat of the intestines was healthy and the capsule of the liver unaffected. *Kidneys* large, lobulated, soft; right, of deeper colour than natural and very watery; left, purple and highly congested.

EOROLOGICAL RESULTS ***from the Madras Observatory Register, for the month of January,* 1866.**

	Standard Thermometers. Observed extremes. Maxim.	Minim.	Daily means. Dry.	Wet.	Percentage of humidity.	Wind. Prevailing direction.	Daily velocity.	Depth of rain.	GENERAL REMARKS.
s.	°	°	°	°	per cent.		Mls.	Ins.	
7	82·2	72·6	77·0	69·8	70	N.E.byE.	250	.....	Passing clouds.
5	81·8	72·0	76·9	69·3	69	E. N. E.	246	....	Fine.
4	81·7	73·3	76·0	69·1	71	E. by N.	156	....	Chiefly fine
5	80·8	67·8	74·5	68·0	72	N.E.byE.	110	.....	Do.
5	80.7	67·7	75·1	69·0	74	E. N. E.	101	....	Fine, with passing clouds.
0	81·5	67·7	75·0	69·0	74	E.	98	......	Fine.
2	80·6	67·7	74·9	69·7	77	E. by N.	98	....	Chiefly fine.
7	81·3	68·9	76·5	70·8	76	E. N. E.	154	....	Fine, with passing clouds.
8	80·8	68·9	77·0	69·6	70	E. N. E.	199	....	Clear day: cloudy night.
8	81·7	71·2	75·9	68·0	67	N.E.byE.	216	....	Fine, with occasional clouds.
8	80·6	67·1	74·8	65·7	63	N. E.byE.	161	....	Chiefly fine.
8	79·5	67·0	74·6	65·8	64	N.E. byE.	109	....	Fine day: cloudy night.
4	79·8	70·0	75·5	6·63	62	N.E.byE.	130	....	Cloudy, with fine intervals.
5	82·2	70·0	75·2	67·8	69	N. E.	157	....	Passing clouds: clear night.
2	81·5	69·4	76·1	70·8	78	N. E.	175	....	Fine.
9	80·0	69·9	73·8	68·8	78	N. E.	147	....	Do.
2	81·3	65·8	73·3	67·6	75	E. N. E.	66	....	Do.
0	81·3	64·8	72·6	67·6	78	E. S. E.	65	....	Do.
6	82·0	65·8	73·1	68·6	80	S.E.byS.	74	....	Do.
4	81·9	65·9	73·6	69·0	80	S. S. E.	87	....	Do.
1	81·4	65·1	73·4	68·7	79	S.E.byE.	86	....	Do.
4	81·1	66·6	74·6	68·7	74	E.	96	....	Do.
0	81·5	67·6	74·8	69·7	78	E. by N.	112	....	Fine, with passing clouds.
1	82·4	69·7	74·9	68·3	72	E. N. E.	146	....	Chiefly fine.
5	81·1	67·5	74·4	68·1	73	E. N. E.	137	....	Fine.
0	81·0	65·9	74·4	68·0	73	E. N. E.	119	....	Do.
6	81·4	66·8	75·0	69·7	77	E. by E.	127	....	Do.
3	80·9	67·5	75·1	67·9	70	E.	118	....	Chiefly fine.
2	82·3	66·4	74·5	69·9	81	E. by S.	91	....	Do.
7	82·8	66·3	75·3	70·2	79	S.E.byS.	133	....	Fine, with passing clouds.
1	83·9	69·7	71.4	73·2	82	S.E.byS.	163	......	Do.

andard Barometer and Thermometers are read at 10 A.M., 4 P.M., and 10 P.M., lly Means are obtained by the application of hourly corrections, deduced from rs' observations. The Cistern of the Barometer is 27 feet above the level of the ie Receiver of the Rain-gauge is three feet from the ground. The Wind and *ered are for the current civil day*—from midnight to midnight.

N. R. POGSON, Government Astronomer.

Meteorological Results *from the Madras Observatory Register, for the month of February,* **1866.**

February 1866.	Barometer reduced to 32°.	Standard Thermometers. Observed extremes. Maxim.	Standard Thermometers. Observed extremes. Minim.	Standard Thermometers. Daily means. Dry.	Standard Thermometers. Daily means. Wet.	Percentage of humidity.	Wind. Prevailing direction.	Wind. Daily velocity.	Depth of rain.	General Remarks.
	Inches.	°	°	°	°	per cent.		Mls.	Ins.	
1st	29·941	85·5	72·1	78·4	74·2	82	S. S. E.	144	....	Fine, with passing clouds.
2nd	29·938	85·9	73·2	79·2	74·6	81	S.E. by S	144	....	Do.
3rd	29·888	86·0	73·1	80·0	73·9	76	S. S. E.	144	....	Passing clouds.
4th	29·809	90·8	73·9	79·7	74·6	80	S.	189	....	Fine.
5th	29·815	88·8	75·9	80·1	72·7	71	S.E. by S.	145	....	Fine, with passing clouds.
6th	29·896	87·9	72·8	80·1	74·2	76	S. by E.	144	....	Do.
7th	29·959	86·6	73·2	80·0	73·7	75	S. S. E.	137	....	Do.
8th	29·964	85·2	72·6	79·4	73·2	75	S. E. by S	109	....	Do.
9th	29·972	84·5	71·7	79·1	72·9	75	E. S. E.	128	....	Do.
10th	29·978	85·5	71·8	78·8	75·4	85	E. S. E.	133	0·21	Showers at 7½ and 8½ A.M. Passing clouds.
11th	29·963	86·3	75·9	81·0	75·3	77	S.E. by S.	177	....	Fine, with passing clouds.
12th	29·933	86·4	74·8	81·0	75·0	76	S.E. by E.	131	....	Do.
13th	29·964	85·2	75·0	80·0	74·6	78	E.	120	....	Chiefly fine.
14th	29·95	85·4	73·8	80·1	72·9	71	E.	125	....	Do.
15th	29·960	84·5	72·7	78·5	71·4	72	E.	115	....	Fine.
16th	29·943	83·7	70·7	78·5	71·3	71	E.	111	....	Fine, with passing clouds.
17th	29·939	83·7	69·9	77·6	69·6	68	E. by S.	97	....	Fine.
18th	29·957	84·5	71·6	77·6	69·2	66	E. S. E.	94	....	Do.
19th	29·956	83·0	70·8	77·4	67·5	60	E. by S.	97	.....	Passing clouds.
20th	29·957	84·1	71·6	76·7	67·3	62	E.	95	......	Fine.
21st	29·944	84·4	67·7	76·5	68·9	69	E. by S.	79	....	Do.
22nd	29·921	83·7	67·3	76·2	71·0	78	E. by S.	93	....	Do.
23rd	29·949	84·0	68·9	78·4	72·2	74	E.	115	....	Chiefly fine.
24th	29·974	84·4	70·9	78·2	70·6	69	E. by N.	117	....	Fine, with passing clouds.
25th	29·964	84·7	70·6	78·1	69·4	65	E.N. E.	158	....	Fine.
26th	29·926	83·3	71·2	75·9	68·1	68	N. E by E.	102	....	Do.
27th	29·922	83·4	65·2	74·0	67·7	73	E. by N.	73	....	Light clouds.
28th	29·914	84·8	64·5	76·6	71·7	79	E. S. E.	100	....	Fine.

The Standard Barometer and Thermometers are read at 10 A. M., 4 P. M., and 10 P. M., and the Daily Means are obtained by the application of hourly corrections, deduced from twenty years' observations. The Cistern of the Barometer is 27 feet above the level of the Sea, and the Receiver of the Rain-gauge is three feet from the ground. The Wind and *Rain registered* are for the current civil day—from midnight to midnight.

N. R. POGSON, Government Astronomer.

)ROLOGICAL RESULTS *from the Madras Observatory Register, for the month of March,* 1866.

Standard Thermometers.				Percentage of humidity.	Wind.		Depth of rain.	GENERAL REMARKS.
Observed extremes.		Daily means.						
Maxim.	Minim.	Dry.	Wet.		Prevailing direction.	Daily velocity.		
°	°	°	°	per cent.		Mls.	Ins.	
86·7	69·4	76·7	71·1	77	S.E.by S.	121	....	Fine.
85·8	66·6	76·0	70·0	75	S.E. by S.	120	....	Do.
86·6	66·7	77·8	71·6	74	S. S. E.	140	....	Do.
88·5	70·9	78·8	73·9	79	S. byE.	137	....	Chiefly fine.
87·0	72·4	78·8	73·0	77	S. S. E.	156	....	Do.
86·7	68·6	77·6	71·5	75	S. by E.	135	....	Fine.
87·7	69·1	79·4	73·0	74	S. S. E.	157	....	Do.
87·5	72·0	80·9	74·4	74	S.E.byS.	169	....	Chiefly fine.
88·5	72·9	81·6	76·0	78	S. S. E.	172	....	Fine.
88·7	73·8	80·8	74·0	73	S.E. byS.	157	....	Passing clouds.
87·2	69·9	79·1	73·2	76	S.E.by S.	164	....	Chiefly fine.
88·2	72·9	80·5	74·0	74	S.E.by S.	150	....	Passing clouds.
89·0	71·7	79·5	73·3	75	S.E.by S.	104	....	Fine.
88·6	69·8	78·6	72·8	77	S.E.by S.	109	....	Do.
89·8	69·5	79·7	73·3	74	S. S. E.	128	....	Light haze.
88·5	72·3	80·9	76·0	80	S. S. E.	199	....	Do.
90·4	73·5	81·4	76·8	82	S. by E.	186	....	Hazy.
89·1	75·7	82·7	77·1	78	S. by E.	205	....	Thick haze.
88·8	74·3	81·6	75·8	77	S. S. E.	154	......	Hazy.
90·4	74·2	81·5	76·1	78	S. by E.	150	.. ..	Do.
88·5	74·3	81·8	76·0	77	S. S. E.	179	....	Fine.
92·2	74·6	82·7	76·7	77	S. by E.	110	....	Do.
92·6	78·3	83·4	77·5	77	S. by E.	252	....	Chiefly fine.
90·8	76·4	83·3	76·7	75	S. S. E.	248	....	Do.
90·9	74·0	82·7	76·8	77	S. by E.	238	....	Fine
90·9	75·3	83·4	76·5	73	S. S. E.	219	....	Chiefly fine.
94·1	75·9	83·7	76·6	73	S.	238	....	Fine.
90·6	76·6	83·7	78·4	79	S. S. E.	254	....	Light clouds.
90·0	78·6	83·2	77·0	76	S. E. by S.	255	....	Passing clouds.
89·1	76·2	82·8	75·7	73	S. E. byE.	163	....	Chiefly fine.
90·2	75·6	83·0	77·9	80	S. E.	188	....	Ditto.

dard Barometer and Thermometers are read at 10 A.M., 4 P.M., and 10 P.M., Means are obtained by the application of hourly corrections, deduced from observations. The Cistern of the Barometer is 27 feet above the level of the *Receiver of the Rain-gauge* is three feet from the ground. The Wind and *are for the current civil day—from midnight to midnight.*

N. R. POGSON Government Astronomer.

PART IV.

MEDICAL INTELLIGENCE.

The Army and Navy Medical Services.

We extract the following from *The Lancet* of the 24th February, and 3rd March last:—

"The Report of the Committee appointed to inquire into the whole question of the Rank, Pay, and Position of Medical Officers of the Army and Navy is now before us. Together with the minutes of evidence and appendix of documents, it forms a volume of 213 pages. We shall content ourselves this week with stating its principal recommendations.

For the Army the Committee recommend—

1. That at all boards upon which army medical officers may be summoned as members, they should sit and take precedence according to their relative rank, and should preside, if senior in relative rank to the combatant officers, with the exception of courts-martial and courts of inquiry on military offences.

It is, however, suggested, for the consideration of the authorities, whether it is not advisable to establish regulations for referring all necessary questions to medical officers for their opinion and report, and to discontinue the system of mixed boards.

2. With the view of preventing misunderstanding as to relative rank at mess:

That invitations sent by the colonel, or officer command*ing, in the* name of himself and the officers of a regiment, be

considered official, and that the senior combatant officer present should always preside; and

That where a second position is formally assigned on such occasions, such position should be determined by relative rank, as defined by the Queen's Regulations and Warrants; we consider, however, that no second place should be recognized.

3. That in the Monthly Army List, the names of the medical officers of each regiment be inserted above those of the other regimental staff, with a heading of "Medical Officers."

Also, that a general list of all medical officers in the army be inserted in the Monthly Army List, and that in such list the relative rank of each class of medical officers with the corresponding rank of combatant officers should be clearly stated; thus:

Inspectors-general of hospital (ranking with major-generals.)

Deputy inspectors-general of hospital (ranking with colonels), &c.

And that opposite the name of each officer should be the number of his regiment or the station in which he is serving.

That medical officers be re-placed in the list of the regimental staff in the classification of officers in the Queen's Regulations; and it is submitted for consideration whether the Medical Department should not be placed immediately after the lists of combatant officers in the Army List.

4. That medical officers, ranking with field officers and being allowed forage, should be ordered to provide a charger and to appear mounted on parade.

5. That increase of pay and earlier retirement be granted as defined in paragraphs Nos. 9, 10, and 11.

9. In view of the proper requirements of the service in this regard, and in order to encourage the coming forward of a larger number of the most eligible class of candidates, and thus to render the competitive examination really worthy of that name, and such as was contemplated upon its establishment, the Committee, from the information before

them, and supported by the deliberate opinions of gentlemen of the highest professional attainments and experience connected with the medical schools of London, who have been examined, consider that, besides the removal of the alleged grievances of medical officers above referred to, a certain increase of pay is absolutely called for ; and with this view, and after full consideration, they recommend that an increase of pay should be extended to medical officers in accordance with the annexed scale :—

SCALE OF PAY PROPOSED FOR ARMY MEDICAL OFFICERS.

RANK.	Under 5 years service.		Above 5 years service.		Above 10 years service.		Above 15 years service.		Above 20 years service.		Above 25 years service.		Above 30 years service.	
	Present rate.	Proposed rate.	Present rate.	Proposed rate.	Present rate.	Proposed rate.	Present rate.	Proposed rate.	Present rate.	Proposed rate.	Present rate.	Proposed rate.	Present rate.	Proposed rate.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Assistant Surgeon	10 0	10 0	11 6	12 6	13 0	15 0	13 0	17 6‡	—	—	—	—	—	—
Surgeon...........	..	..	..	..	15 0	17 6†	18 0	20 0	—	—	—	—	—	—
Surgeon Major...	..	..	..	...	..	..	..	..	22 0	24 0†	25 0†	27 0	—	—

A proposal to increase the pay of the inspectorial rank was made, but the Committee, being divided in opinion, do not make any recommendation.*

10. The Committee also consider that the prospect of optional retirement at an earlier period that at present permitted would prove a further inducement to young medical men to enter her Majesty's service ; they therefore recommend that army medical officers should be permitted to retire after twenty years' service on full pay ; but at the same time, with a view to guarding the interests of her Majesty's service, they are of opinion that the rate of half pay awarded to officers so retiring should not exceed five-tenths of their full pay,† and that officers with this service should be permitted to retire on the present half pay of their rank, if, after one year on half pay, they are reported by a medical board to be permanently unfit for further service.

11. The Committee further recommend, that as a special reward to officers of long and good service, who, owing to.

* The proposal was to increase the minimum pay of Deputy Inspectors-General to 30*s*., after twenty-five years' service to 34*s*., and after thirty years to 38*s*., of Inspectors-general to 45*s*., and after twenty-five years' service to 50*s*.

† As recommended to the Committee of the House of Commons in 1856, by Sir Andrew Smith, when Medical Director General of the Army.

the comparatively small numbers of the inspectorial ranks, have not been promoted to any higher position than that of surgeon-major, such officers, of the rank of surgeon-major, as have served for twenty-five years on full pay should, on being compulsorily retired at fifty-five years of age, receive the half pay of £1 a day, but such officers retiring voluntarily under fifty-five years of age should receive only seven-tenths of their full pay.

For the Navy, the Committee recommend—

1. That staff-surgeons be placed on a separate list, and considered as a distinct rank, and that promotion to that rank (although twenty years on full pay may not have been completed) should be open to officers for distinguished or special service.

2. That the whole time an assistant-surgeon serves on full pay should be allowed to qualify for the rank of staff-surgeon, provided he passes his examination for surgeon before he completes ten years' service.

3. To compensate the naval surgeon for loss of time, by his being placed on half pay, and unable to obtain employment, the surgeons and staff-surgeons' full pay should increase by periods of four years instead of five years as at present.

4. That naval medical officers be granted the same allowances at hospitals at home and abroad as the army medical officers, in respect to servants, fuel, furniture, or pecuniary allowances in lieu.

5. That the scale of travelling allowances, extra pay, lodging money, and compensation for losses, be fixed for naval medical officers according to relative rank.

6. With respect to the question of prize money, the Committee, owing to the present principle on which the Prize Proclamation is drawn, are unable to agree upon a special recommendation, but are inclined to the opinion that the share of medical officers should, after the officer in command of the ship, be regulated by relative rank.

7. That in regard to cabins, while the requirements of the service render it necessary that the senior executive officer and the staff commander or master should have the

cabins placed most advantageously for their special duties, medical officers should after them have cabins more in accordance with their relative rank in the service, and that cabins for all assistant-surgeons should be specially ordered to prevent future difficulties or neglect of the existing Admiralty Order.

8. That a staff-surgeon, ranking with commander, be allowed a servant.

9. That a staff-surgeon should be appointed to all flag-ships bearing the flag of a commander-in-chief on foreign stations, with an allowance of 5*s.* a day in addition to his established pay.

10. That the periods of retirement by age be fixed for staff-surgeon, surgeon, or assistant-surgeon at fifty-five years; inspector-general and deputy inspector-general at sixty-five years; but this regulation should only apply to new appointments.

11. That naval medical officers be considered equally eligible to honorary distinctions as army medical officers.

12. That they should have equal consideration for Greenwich Hospital pensions with other officers of the service.

13. That assistant-surgeons, after completing their time for examination for the rank of surgeon, be granted two months leave of absence on full pay, on the condition of their resuming their studies at a medical school or hospital.

14. That in order to place staff-surgeons on an equality in rank with surgeons-major in the army, they should rank with commanders by date of commission; but we are of opinion that officers in command of H. M. ships must on all occasions be considered senior in rank and precedence to all officers placed under their command, and that a ship, as a regiment, must always be represented by an executive or combatant officer, after whom all officers should take precedence according to the relative rank conferred on them by Royal Authority. See clause 10 of the Order in Council of 13th May 1859.

15. That the pay of the naval medical officers be increased in accordance to the following scale :—

SCALE OF PAY PROPOSED FOR NAVAL MEDICAL OFFICERS.

Rank.	Under 5 years.		Above 5 years service.		Above 10 years service.		Above 14 years service.		Above 18 years service.		Above 22 years service.		Above 26 years service.		Above 30 years service.	
	Present rate.	Proposed rate.	Present rate.	Proposed rate.	Present rate.	Proposed rate.	Present rate.	Proposed rate.	Present rate.	Proposed rate.	Present rate.	Proposed rate.	Present rate.	Proposed rate.	Present rate.	Proposed rate.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Asst. Surgeon… …	10 0	12 6	11 6	12 6	13 0	15 0	13 6	17 6*	—	—	—	—	—	—	—	—
Surgeon… ………	—	—	—	—	15 0	17 6†	18 0	20 0	18 0	22 0	—	—	—	—	—	—
Staff Surgeon……	—	—	—	—	—	—	—	—	22 0	24 0†	25 0	27 0	25 0	27 0	—	—
Depy. Inspr. Genl. of Hospl. & Fleets.	—	—	—	—	—	—	—	—	28 0	30 0†	30 0	32 0	30 0	35 0	34 0	37 0
Inspector. Genl. of Hospl. & Fleets..	—	—	—	—	—	—	—	—	—	—	40 0†	45 0	45 0	47 0	45 0	50 0

16. That, as a prospect of optional retirement at an earlier period than at present permitted would prove a further inducement to young men to enter her Majesty's service, naval medical officers should be permitted to retire after twenty years' service on full pay; but at the same time, in order to guard the interests of her Majesty's service, the rate of half pay awarded to officers so retiring should not exceed five-tenths of their full pay, and that officers with this service should be permitted to retire on the half pay of their rank, if, after one year on half pay, they are found on medical survey to be permanently unfit for further service.

17. That as a special reward to officers of long and good service, who, owing to the comparatively small numbers of the inspectorial ranks, have not been promoted to any higher position than that of staff surgeon, such officers of the rank of staff surgeon as have served for twenty-five years on full pay should, on being compulsorily retired at fifty-five years of age or retired on medical survey, receive the half pay of £1 a day.

We further recommend that competitive examination for admission of medical officers into the navy be established at Greenwich hospital, after the plan adopted in the army, at Chelsea, and that professional instruction by a course of lectures and attendance at Haslar be given to medical officers on first entry, in some measure on the system adopted at Netley Hospital.

Some of the medical witnesses have stated that it is desirable that naval boards of survey should be made purely medical boards as they are in the army; on this question, however, the Committee are not agreed, and therefore offer no opinion.

(Signed)

ALEX. MINE. H. B. PHILLIMORE.
DOUGLAS GALTON, W. O. MARKHAM.
JAMES B. GIBSON, D. G. GEORGE BUSK.
A. BRYSON.

Sir James Gibson protests against the greater favour shown to the navy by the above recommendations, and we fear that the army medical officers will not be satisfied with the terms of retirement, improved though they be. On the whole, however, we believe that these recommendations will be received with gratification, and certainly the services owe much

Dr. Markham and Mr. Busk for their careful and laborious restigation of the claims of the officers, and assiduous atten- n to the duties of the Committee."—*The Lancet*, 24th bruary 1866.

"The recommendation of the Committee on the Rank, Pay, d Position of the Army and Navy Medical Officers, which published *in extenso* last week, will, it must be hoped, be rried out intact by the naval and military authorities. In at case we should be able to recommend the services to the udents in our schools as fulfilling in the most important spects reasonable expectations. The concessions made are considerable importance. They include nearly every point rank, position, pay, and retirement which had been chal- nged. Of course, even now the medical services of the my and navy cannot be put in competition with the higher izes of the profession, and the only prospect which they fer is that of a certain competency and an honourable posi- on. Considered in relation to the position of combatant ficers, the pay and rank are both liberal; and we see no ason why the services may not now expect a good supply well-qualified men. It is very notable that the combatant embers of the Committee have throughout shown a full and ir appreciation of the just claims of the medical officers, d there is every reason to believe that if Sir James Gibson ad honestly and boldly stated their case at the proper time, e present interregnum of discontent would not have occur- d."—*The Lancet*, 3rd March 1866.

The Report of the Committee at the Admiralty.

Ve take the following from the *Medical Times* and *azette* of 10th March :—

No one can read this Report without perceiving that there ust be something very defective in the relations of the central edical with the executive authorities. Such appears to have een the impression on the mind of one at least of the civil mem- ers of the Committee, and this Report affords much corroboration f it. Whether this has arisen from want of power, or want of nergy, on the part of the Medical authorities, we cannot say ; ut there is something very wrong somewhere in the working of

the Medical Services. There does not appear to be any—or, at any rate, any adequate representation of professional feeling.

For the last four or five years men have been appealing through the public press for a redress of many minor matters, which might have been adjusted by half-an-hour's conversation between the official Medical representatives and the Executives of the Horse Guards and Admiralty. Instead of this, things were allowed to take their course and acquire strength by doing so. Medical officers ought to repose the same confidence in their own administrators as the combatant officers repose in the Horse Guards and Board of Admiralty; but this is unfortunately not the case. There was no uniformity of regulation, and consequently no uniformity of action and custom. Warrants so loosely framed as to be capable of almost any interpretation; regulations, which ought to have been expressed with perspecuity, contradicting one another; and official memoranda at variance with all the rest! A Medical officer might find himself in *this* position to-day, and in *that* to morrow, according as he had a different commanding officer. Such a state of things strikes at the root of all discipline, and the combatant officer must often have been as fairly puzzled, and the consequence was, that matters were always "cropping up," every bit as distasteful to the Executive as to the Medical officer. Then, again, no end of very small difficulties and disagreeables were accumulating, of no earthly interest to one set of officers, but productive of injury and serious discontent to another. Had the representation of our professional instincts, feelings, and interests, been more firmly carried out, we must think the authorities would never have pursued so dangerous and suicidal a policy. If this has not been done, then the official representation is very ineffective.

This enquiry was not set on foot until grave injury had been done to the State. The end has been, that the Executive and Medical members of the Committee are unanimous in their Report. We learn that the Admiral presiding entered into and met all the grievances in a most considerate manner; and the other Executives conducted the investigation in as fair and impartial a spirit as was consistent with the interests they represented and had to protect.

Of course the Report is a compromise; but it is not the worse on that account. In dealing with the Army part of it, we could not avoid hitting off such a blot as the absence of promotion for the juniors. We were not singular in this, for almost all the witnesses examined represented the long continuance in a subordinate position as *the* grievance of the junior officers.

In the Naval service it is different. Promotion has been, and must continue to be for some time, much quicker. Still the Naval Medical Officers undoubtedly were worse off than their Army

›rethren. The contrast between the two services in respect of ·ank, pay, allowances, and position was very unfair. The Report gives a good summary of those points of difference which were o the disadvantage of the Naval Medical Officer, and the Comnittee have endeavoured to rectify these, with so large a measure of success as to have called forth a strong protest from Sir James Gibson, against the peculiar favour shown to the Navy. Unquestionably there are a great many personal and social discomforts attending a sea-faring life, and the Naval Service is thus placed at a disadvantage in the competition with the Army. It is not every Medical man that loves the sea, and our Army friends must not grudge those who make the sacrifice a few extras by way of a "set off."

Of course it is impossible to please every one, and the recommendations of the Committee for the Naval Medical Service will appear insufficient to some. All the major evils have been removed, and with regard to the rest, "the Committee being divided in opinion, we cannot offer a decided recommendation." The employment of Staff Surgeons instead of Deputy-Inspectors in foreign flag-ships is thought by some a defect; but they admit that there are many reasons to be urged on the other side.

We have gone through the recommendations with some care, and we venture to express the hope and belief that all *reasonable men will be contented.* The pay is liberal for the junior ranks; the prospect of promotion very satisfactory when compared with the Army; and in all other respects the Committee appear to have been guided by an honest determination to put things upon a fair and good footing. The protest to which we have alluded ought at least to prove to our professional brethren afloat that they no longer labour under relative disadvantages.

We were glad to see that Lord C. Paget is evidently disposed to adopt the Report of the Committee; and this reminds us that Sir J. Pakington did not lose the opportunity of saying a good word for that Department whose interests he has never lost one opportunity of protecting.

The New Sydenham Society.

INFORMATION TO NON-MEMBERS.

The Council of the New Sydenham Society begs to ask the attention of those who have not yet joined it, to the special advantages which the current year offers to new members. *With this year it may almost be considered that a new series of works will be commenced.* The "Atlas

of Skin Diseases" furnishes the only exception to this statement, and of this the former Fasciculi may be purchased without subscribing for the other works. The "Year-book" has been wholly altered in plan, and will be replaced by a volume of "Biennial Retrospects," the first of which will appear early in 1867. The Council has the pleasure to announce that these "Retrospects," will have the advantage of Editorship as follows:—

MEDICINE........	Dr. MURCHISON.
SURGERY (GENERAL)...	...Mr. T. HOLMES.
OPHTHALMIC MEDICINE AND SURGERY...	Mr. T. WINDSOR.
MIDWIFERY...	...Dr. BARNES.
FORENSIC MEDICINE...... .... TOXICOLOGY AND HYGIENE	Dr. HILTON FAGGE.
PHYSIOLOGY...	...Mr. H. POWER.

The following are among the Works which are now in preparation:—

GRIESINGER'S MANUAL OF MENTAL DISEASES, translated by Dr. Lockhart Robertson.

BERNUTZ AND GOUPIL ON SOME OF THE DISEASES OF WOMEN, edited by Dr. Meadows.

HEBRA ON EXANTHEMS AND DISEASES OF THE SKIN, translated by Dr. Hilton Fagge.

VOGEL ON DISEASES OF THE KIDNEY.

A BIENNIAL RETROSPECT OF MEDICINE AND SURGERY, FOR 1866—67.

A SIXTH FASCICULUS OF THE ATLAS OF PORTRAITS OF SKIN DISEASES.

From the prosperous state of the funds of the Society, the Council confidently hopes it will be enabled to issue at least three of the above works and a Fasciculus of Plates for the current year's subscription.

Arrangements have been made to complete the "Atlas of Skin Diseases" as early as possible, and a Fasciculus will be given regularly each year. This Atlas at present comprises the following portraits (life size):—

Psoriasis diffusa..................................	*From Hebra.*
Psoriasis vulgaris inveterata....................	*Original.*
Icthyosis Hystrix..................................	*Hebra.*
Herpes frontalis....................................	*Original.*
Molluscum Contagiosum..........................	„
Leucoderma...	„
Morbus Addisonii	„
Favus..	*From Hebra.*

Favus with Tinea Tonsurans..................*From Hebra.*
Alopœcia Areata.............................. ——
Pityriasis versicolor.......... ....*Original.*
Lupus Serpiginosus......... ....*From Hebra.*
Lupus vulgaris exulcerans....... .... ——
Lupus Scrophulosus .... ——
Pemphigus......... ....*Original.*

New Subscribers will be allowed to obtain complete sets of hese Portraits (five Fasciculi) for Two Guineas. Those rho may wish for complete sets of the Society's works, including the Atlas, can obtain them for seven Guineas. The ociety has published during seven years twenty-two printd volumes and five Fasciculi.; very few complete sets now emain.

The Council is able to point to the gratifying fact that umerous subscriptions are still received for back volumes. As many applications have been made, especially from memers of the legal profession; for permission to purchase the olumes of Casper's Work separately, it has been decided to llow the four volumes to be obtained for two subscriptions *i.e.* £2. 2s.)

The Subscription is One Guinea (Rupees ten and a half) annually, payable in advance, in January of each year.

New Members are requested to send their names and emittances to the Society's Honorary Local Secretary, Mr. W. N. Chipperfield, 13, Pantheon Road, Madras, from whom Copies of the last Annual Report, with complete List f the Society's publications, may be had on application.

James Paget, *President.*
W. Sedgwick Saunders, *Treasurer.*
Jonathan Hutchinson, *Secretary.*

March, 1866.

"They manage these things better in France."

We have very great pleasure in calling attention to the following, which we extract from the "*Gazette des Hopitaux,*" 4th January 1866.

"PARIS, *3rd January* 1866.—We are happy to commence this year with the good news which *The Moniteur* of this day brings us,

"The epidemic of Cholera, first breaking out so virulently in the South of France, and ultimately advancing even to the gates of Paris, has given rise to numerous sacrifices on the part of Physicians. The Students of Medicine have particularly distinguished themselves under these painful circumstances; they deserved unusual rewards. The Order of the *Legion d'honneur*, honorary distinctions in the department of public instruction, freedom from fees connected with their studies; such have been the recognitions (*moyens*) which the Emperor and his Minister have bestowed in their favour.

"This act of justice will be heartily applauded by all.

"At the head of those rewarded, we find a name which enjoys, by just right, the greatest popularity in the school of Montpellier. After having been the first at the outbreak of the epidemic, of which he might have been the victim; after having been the true friend and adviser of the scholars who devoted themselves to the sufferers from Cholera, it was but right that M. Jacquemet should see his name at the top of the list of those rewarded.

"The following is the text of the resolution taken by the Minister of Public Instruction:—

"RESOLUTION.

"The Minister of Public Instruction,

"Considering the Imperial decree, dated 5th December 1865, thus worded;

"'There shall be accorded to those Students of Medicine who shall be brought to the notice of our Minister of Public Instruction, by the *Préfets* of Departments, for their devotion in relieving the sick attacked with Cholera, a total or partial free-gift of the payments which they have still to make for the completion of their Medical Studies, and for obtaining the diploma to which they aspire';

"Considering the reports of the *Senateur Préfet* of the Seine, of the *Senateur* charged with the administration of the department of the Rhone, of the *Préfets* of the departments of Var and of Hérault, of the Vice-rector of the *Académie de Paris,* and of the Rectors of the Academies of Aix and of Montpellier;

"Considering that, during the epidemic of Cholera which has afflicted Marseilles, Toulon, Arles and Paris, a great number of students belonging to the Preparatory School of Medicine and

Pharmacy of Marseilles, to the Faculty of Medicine of Montpellier, and to the Faculty of Medicine and the Upper School of Pharmacy of Paris, have given proof of a devotion worthy of commendation ; it behoves the administration of Public Instruction to honor their conduct by a public acknowledgment ;

" Considering that, although all have lavished their attentions upon the victims of the plague, the self-denial of the students of the Faculty of Medicine of Montpellier, who, during the holidays, quitted their families and travelled some distance to expose themselves to this danger, merits special mention ;

" Considering that M. Jacquemet, graduate of the Faculty of Medicine of Montpellier, spontaneously repaired to Toulon in order to direct and partake of the devotedness of the scholars ;

" *Decree.*

" Art. I. Named an Officer of Public Instruction. M. Jacquemet, Graduate of the Faculty of Medicine of Montpellier ;

" Named Officers of the Academy. M. Massol, student of Montpellier ; M. Brière, student of Paris.

" Art. II. Some scientific works, bearing inscription that they are bestowed in memory of services rendered during the epidemic of 1865, will be awarded in the name of the Minister of Public Instruction :

" 1st, to M. Jacquemet, graduate of the Faculty of Medicine of Montpellier.

" 2nd. To the Students whose names follow :—

" *For services rendered at Toulon. Students of Medicine at Montpellier.*

" M. M. Gayat, named Chevalier de la Legion d'honneur by the decree of the 5th December 1865 ; Massol ; Hippolyte ; Girard ; Jansion ; Ferran ; Autar ; Azémar ; Miran.

" *For services rendered at Arles. Students of Medicine at Montpellier.*

" M.M. Benoit ; Watering ; Fanton.

" *For services rendered in the Hospitals of Paris. Paris Students.*

" M.M. Legros and Lelion, named Chevaliers of the Legion of Honour, by the decree of the 5th December 1865 ; M. Brière.

" Art. III. A free-gift of the duties which have still to be paid to the Treasury account, commencing 1st January 1866, for the completion of their studies (inscriptions, examens, thése, certificat d'aptitude, diplôme), is awarded to the students whose names follow :—

" *For services rendered at Marseilles. Students of the Preparatory School of Pharmacy of Marseilles.*

" M.M. Jullien ; D'Hurlaborde ; Marcorellés ; Coste ; Boutan ; Eyriés ; Nicolas ; Garcin.

For services rendered at Toulon. Scholars of the Faculty of Medicine of Montpellier.

"M.M. Gayat; Massol; Hippolyte; Girard; Jansion; Ferran; Louisel de Saulnays; Autar; Azémar; Miran; Cambon; Falc; Masse.

"*For services rendered at Arles. Students of the Faculty of Medicine of Montpellier.*

"M.M. Benoit; Watering; Fanton; Olier; Dutrénit; Vallat; De la Chataigneraie.

"*For services rendered in the Hospitals of Paris. Students of the Faculty of Medicine of Paris.*

"M.M. Legros, Lelion, Briere, Choyaux, Legroux, Lemaltre, Boussard, Spiess, Lévêgue, Zaepffel, Jaubert, Gorski, Caresine, Hallopeau, Duprat, Carriére, Menriot, Besnier, Rogues, Hayem, Auger, Derlon, Drouin, Paris, Fortin, Jolly, Bergeron, Briancon, Fredet, Michelet, Tardieu.

"*Students of the High School of Pharmacy of Paris.*

"M.M. Byasson, Jungfleisch, Bonnefon, Gérandel, Gindre.

"Executed at Paris, 1st January 1866.

"V. Duruy."

We have translated the whole article, for it would not have been right to have left out a single letter of such a noble decree.

The only comment we have to make is the heading we have put to this item of "Medical Intelligence."

Annual Report of the Madras Medical College.

1864-65.

I.—MEDICAL COLLEGE.

1. The Session.

The Session of nine months' duration, which terminates this day, commenced on the 1st of September last.

2. College Staff.

No changes have taken place among the Professors since last Report (26th May 1864). Dr. Paul acted as Professor of Midwifery from the commencement of the Session until the 27th of October, on which date Dr. Aitken re-joined his Professorship.

Under dates the 18th of June and 29th July 1864,* Government directed that Mr. Harvey, the Assistant to the Professor of Chemistry, should be temporarily relieved from his duties as Teacher of Medicine in the Junior Department, in order to assist the Chemical Examiner in conducting

* Orders Nos. 2086 and 2596.

the analysis of the drinking waters of Madras. Assistant Apothecary Hamilton, the Johnstone Medalist of Session 1857-58, was nominated to the temporary vacancy; he joined on the 1st November 1864, relieving Messrs. Wood and Wilkins, who had, in the interim, carried on the duties of the appointment.

3. Constitution of the Departments and Classes at the commencement and close of the Session.

At the commencement of the Session, the *Senior Department* consisted of:—

1	Lane Scholar in his	5th	year of study.
2	Government Students in their	4th	do.
2	do. do.	3rd	do.
1	do. do. and 1 Lane Scholar in their	2nd	do.

—making a total of 7 Students.

Lane Scholar Evers, having passed his final examination successfully, will receive this day the Diploma of Graduate in Medicine and Surgery of the College. Six Students remain upon the Roll. There were no admissions to the Senior Department during last Session.

The *Second Department*, at the opening of the Session, consisted of:—

1st Class	Students	11
2nd	do.	10
3rd	do.	20
	Total...	41

of whom eleven "1st Class" Students having passed the Final Examination Committee, will receive, on the present occasion, their Certificates of Qualification for the grade of Assistant Apothecary. One lad, a remanded Student of the 3rd Class, named D. Solomon, was permitted to resign the service from the 1st October 1864.

The present roll of the Second Department, stands as follows:—

1st Class	Students	11
2nd	do.	10
3rd	do.	19
	Total...	40

The numbers of the *Junior Department*, at the beginning of the Session, were as follows:—

1st Class	Students	32
2nd	do.	29
3rd	do.	40
	Total...	101

Majeed Khan, who resigned the service in order that he might appear as a Candidate for admission to the Second Department,

having failed to gain admission to the same, was permitted by Government (under Order No. 2791*) to re-join his batch in the Junior Department. Doorgiah, a native Student of the 1st Class, died on the 2nd September 1864, and 2nd Class Student Coomarasawmy on the 17th February 1865. 2nd Class Student D. Bastian has been dismissed the service from the 1st of May for a serious offence. (G. O. C. C. dated 10th May 1865).

* Dated 26th October 1864.

Four Pupils of the 3rd or English Class, failed to join College.

At present the Department stands thus :—

1st Class	Students	31
2nd	do.	27
3rd	do.	36
	Total...	94

Of this aggregate, thirty-one lads, constituting the 1st Class of the Junior Department, having passed the examination as qualified for the grade of 3rd Class Hospital Assistants, will receive their Certificates of Qualification on the present occasion.

4. Lectures, Examinations, &c,

The subjoined extracts from the Annual Reports of the Professors shew the number of lectures delivered to, and examinations held in, each Class during the past Session.

The Professor of Medicine, &c., reports as follows :—

"One hundred and thirty-three lectures were delivered during the Session. Twenty three examinations were recorded."

The Professor of Ophthalmology observes :—

"The Course of Ophthalmology this Session consisted of sixty-two lectures, including ten written and eight oral examinations."

The Professor of Midwifery remarks :—

"During the Session, one hundred and nineteen lectures have been delivered, of which thirty-seven were given by Dr. Paul, the rest by me. The number of examinations has been thirty-three, of which five were written and twenty-eight oral."

The Professor of Surgery, &c., states that "the number of lectures given was one hundred and twenty. The number of examinations held was thirty-six."

The Professor of Materia Medica reports, "Lectures, one hundred and ten. Recorded examinations forty."

The Professor of Chemistry reports as follows :—

"The Chemistry Class met one hundred and fifty-six times during the past Session ; eighty-four of these meetings were occupied with the usual course of lectures, the remaining seventy-two being Class examinations ; of these, five were written ;—all were registered."

The Professor of Anatomy, &c., observes :—

Anatomical Course,—During the Session I have delivered one hundred and four lectures on Anatomy.

"I have held sixty examinations; the results of fifty-three of which have been recorded, viz., twenty-four of the Second Class, and twenty-nine of the Third Class."

Physiological Course.—I have delivered fifty-eight lectures on Physiology.

"I have held thirty examinations in Physiology; the results of twenty-three of which have been recorded, viz., fourteen of the Senior, and nine of the Junior Class."

The Professor of Medical Jurisprudence states that "the course has consisted of seventy-five lectures and fourteen examinations."

Remarks.—The recorded examinations of the several classes stand in the following numerical proportion to the lectures :—

In the Class of	Medicine	as 1 to 6.
Do.	Ophthalmology	1 to $2\frac{1}{2}$.
Do.	Midwifery	1 to $3\frac{2}{3}$.
Do.	Surgery	1 to $3\frac{1}{3}$.
Do.	Materia Medica	1 to $2\frac{3}{4}$.
Do.	Chemistry	1 to $1\frac{1}{6}$.
Do.	Anatomy	1 to $1\frac{2}{3}$.
Do.	Physiology	1 to 2.
Do.	Medical Jurisprudence	1 to $5\frac{1}{3}$.

It was found necessary this Session to adopt some better arrangements than existing ones as regards the study of Practical Anatomy. With the concurrence of the Professor of Anatomy, four hours daily, namely, from 6 to 10 A.M. were set apart for this purpose. The alteration has worked well, and has remedied a long-existing defect in the College arrangements.

A stop was put this Session to a custom, which had crept in, of allowing lads to attend, as voluntary Students, other classes than those indicated in their curricula.

It was deemed expedient also to discourage the practice of extra hours' study, and to arrange that, as far as practicable, the lads should have a whole holiday on Saturdays. These changes have acted well; Students are no longer permitted to attend classes not included in their curricula, their energy and strength are no longer exacted to attain proficiency in one branch, at the cost of failure in another, and every lad can now look forward to his Saturday holiday from College, as his ungrudged and fairly earned day of rest and recreation.

Six weeks before the close of the Session, students of the 2nd and 3rd years, who were reported by the Professors as "deficient" or "inattentive," were directed to attend College a certain number of hours on Saturdays, to enable them to overtake their several subjects, before the returns of the classes should be made out. This

final chance of making up for lost time is regarded by the students as a valuable privilege, rather than as a punishment.

I have devoted Fridays to personal examinations of the classes in College, and have satisfied myself, as far as practicable, of the capacity, industry, and acquirements of every student of the Institution.

5. Senior Department.

Speaking of the Senior Department, the following is a correct summary of the opinions of the Professors on the conduct and capabilities of the several Students.

Lane Scholar Evers.

Of Lane scholar Evers, Mr. Blacklock reports, "He has had better health this year, and has been most industrious, and made much progress. He knows his profession well."

Dr. Smith observes, "The senior student is Lane scholar Evers, of whose conduct, regularity of attendance, attention to the lectures and industry, I have to speak in warm terms of approbation. His progress in his studies has been steady."

Dr. Aitken alludes to the same student's conduct as "very commendable," and to his attainments as "highly creditable." Dr. Urquhart alludes to "his intelligence, industry, ability, progress, and conduct" as "most satisfactory."

Dr. Paul remarks, "Lane scholar B. Evers has made fair progress during the Session, but he has not attained the high standard former years gave promise of, and during the last two months of the Session especially, others have gained on him considerably."

S. W. Seethumbarum Pillay and C. Chinnapoo.

Of fourth year Government students C. Chinnapoo and S. W. Seethumbarum Pillay, the following testimonies are borne by their teachers. Mr. Blacklock observes—"C. Chinnapoo, Government scholar, in his 4th year in College, and second in Medicine. He has been most persevering, and has improved very much. S. W. Seethumbarum Pillay has had better health than during last Session, and has been very industrious." Dr. Aitken uses the same terms with reference to these students he had employed, when speaking of Evers, and adds, "Chinnapoo is a most intelligent student, and although this is his first course of Midwifery, he has made very great progress. The attainments of S. W. Seethumbarum Pillay are fair, and although slow of apprehension,—which has appeared to me to be partly owing to his insufficient acquaintance with English—I think he is deserving of high approval." Dr. Paul reports—"Of the two Senior Government students Chinnapoo and Seethumbarum Pillay, I am glad to report very satisfactorily. They are intelligent, industrious, possessed of considerable ability, and very well-conducted."

P. S. Gnanamoottoo Pillay & Pursooramen Naick.

Of the 3rd year Government students P. S. Gnanamoottoo Pillay and Pursooramen Naick, Mr. Blacklock reports—"He (*i. e.*, P. S. Gnanamoottoo Pillay) has lost forty-two days by sick-

ness. He is very intelligent, and has made fair progress." "P Pursooramen Naick is dull and slow, but promises to do better. The conduct of these young men has been excellent." Dr. Paul observes—"Of the 3rd year Government students Gnanamoottoo Pillay and Pursooramen Naick, I am unable to speak so highly. They have neither the intelligence nor the industry of the two senior. Gnanamoottoo has been no fewer than forty-two days absent during the Session, and he is rather inattentive to his studies. Pursooramen is less so, but there is room for improvement in both, in this respect." Alluding to the same lads, Dr. Montgomery reports that "they have improved satisfactorily, but Gnanamoottoo was long in hospital, and thus made less complete progress than I could have wished." "Having," he adds, "on two previous occasions reported unfavourably on these young men, I have much pleasure in according a more favorable opinion of their industry and intelligence during the past Session."

Mr. Chipperfield's testimony is decidedly unfavorable as regards both students, though he speaks highly of Gnanamoottoo Pillay's written replies to certain questions in Physiology, set by the Annual Class Committee. Mr. Chipperfield closes his notice of these lads with the following words :—"I cannot speak positively as to their industry, but I should say it is defective. Their intelligence is fair, abilities of a moderate order, and *progress decidedly unsatisfactory.* Their conduct in class has been unexceptionable."

2nd year Government student W. Gregory, and Lane scholar Danacottee Rajoo.

The testimony borne to the character, abilities, industry, and conduct of these students by the Professors under whom they have studied, is very high. I select Dr. Montgomery's remarks upon them as a fair specimen of the opinion entertained of them. "Gregory and Danacotee Rajoo are both highly intelligent hard-working students : I can speak in the highest terms of their abilities and industry."

In reporting the result of Evers' final examination for the Diploma of the College, the Committee observe—"Lane student B. Evers was the only elève in this Department who came up for examination, and he has acquitted himself in a highly creditable manner. In almost every subject he attained the highest mark, while his written papers discover a facility of expressing himself correctly and well, not often met with among the alumni of this College. At the instance of the Committee he dissected the neck remarkably neatly and carefully, and the operations he performed in presence of the Members of the Committee, though wanting that dexterity which practice only can secure, tested his acquaintance with practical surgery, and proved it to be very fair." To this I have only to add that Mr. Evers leaves College the first in all his classes, and with the best wishes of his teachers for his future success. If good character, fair abilities, untiring industry in the attainment of pro-

fessional knowledge, can avail to secure him success in life, then that success may be regarded as certain.

The Committee of the Lane Scholarships are to be congratulated upon the selection they have made of young men to hold these useful scholarships—would there were more of such scholarships in Madras to perpetuate the memory of distinguished men, and fewer cenotaphs, statues, and portraits !

The following is a summary of the results of the annual examinations held at the close of the Session :—

Seethumbarum Pillay has been pronounced "good" in his written examinations in Midwifery, Surgery, and Medicine ; his oral examination on the same subjects being respectively "indifferent," "fair," and "indifferent." In the written examination on Therapeutics he is rated as "fair." Chinnapoo has had the good fortune to obtain "very good" marks in the oral examination in Therapeutics, Midwifery, Surgery, and Medicine, and in the written examinations in Midwifery, Surgery, and Therapeutics ; in the written examination in Medicine he is rated as "good."

These two young men deserve great credit, alike for their industry and their intelligence. Chinnapoo promises to be the abler man of the two ; he is prosecuting his studies with much zeal and success.

Pursooramen Naick has obtained "very good" marks in the oral examination in Materia Medica alone ; in the written examination on the subject his mark is "good." His oral examination in Physiology ranks "fair," his written on the same subject "*very bad.*" In Surgery, both oral and written, he ranks "indifferent," and in Medicine "indifferent" in the oral, and fair in the written examination. He is decidedly deficient in Physiology, and made but a poor appearance in Surgery and Medicine.

Gnanamoottoo Pillay is not more fortunate. In Materia Medica (oral), and in Physiology (written), he has secured "very good" marks, whilst in the oral examination in Physiology he is ranked as "good." In Surgery (oral) he is entered as "very bad," and in the written examination on the same subject as "indifferent." In Medicine, both oral and written, he is rated as "bad." Taking into consideration the indifferent character of the examinations passed for two successive Sessions, by Gnanamoottoo Pillay and Pursooramen Naick, as well as the repeated and partly unexplained absences from College of the former of these young men, I recommend that the Government scholarships be withdrawn from them for one year. Another unfavorable report next Session must elicit from me a more serious recommendation.

In the oral and written examinations on the subjects of Anatomy, Chemistry, and Materia Medica, Gregory has received "very good" marks in all. In the same subjects, Danacotee has received "very good" marks in the oral examinations in Anatomy and Materia Medica, "good" marks in Chemistry both oral and written, "good"

in the written examination on Anatomy, and "fair" in the written, examination in Materia Medica. These young men deserve hearty commendation.

6. Second Department.

In referring to the 1st Class of the Second Department, Mr. Blacklock observes :—

1st Class, 2nd Department.

"Tyrrell, Doyle, Hesterlow, Dodd, and Eate have made excellent progress, and will turn out to be good Assistant Apothecaries. Gibson, Jones, Hellein, Goggan, and Francis, have been dull and slow; though, excepting *Jones* and *Francis*, doing their best to study diligently."

Dr. Smith remarks, "Eleven young men of the Second Department attended the Course; with all of these I am well pleased. Their conduct has been unexceptionable, their attendance regular, and their attention praiseworthy. All have been very industrious."

Dr. Paul reports, "The youths in this Department are very unequal in intelligence, industry, and ability; consequently some have made very satisfactory progress and some have not."

The lads of this batch have passed the final examination successfully, none having failed. The Committee make the following remarks :—

"The eleven students of the Second Department have all passed, but with very different degrees of merit. Tyrrell and Doyle are at the head of the list, while *Francis* has narrowly escaped rejection. Before concluding, the Committee beg to express their thanks to the Principal of the College and the Professor of Anatomy for an opportunity of testing the anatomical attainments of this class by actual dissection.

With the exception of Cajah Furreed Oodeen,* the youths dissected well the parts set them, and those who were called upon to demonstrate on the dead body performed the task most creditably."

* This candidate is a 2nd Dresser, and does not belong to the classes under remark.

2nd Class, 2nd Department.

With reference to the 2nd Class of the Second Department, Mr. Blacklock observes :—

"Ellis, Watts, Rath, and Downing, were remanded last year, so that this has been their second year in Medicine. Ellis has improved very much this year, and is at the head of his class. The other remanded students have been extremely dull and stupid, and have retarded the progress of all the other students very much, by requiring a large amount of repetition, which has had, I regret to say, scarcely any effect."

Dr. Paul remarks, "The youths in the 2nd Class are, generally speaking, very young and thoughtless. None are hard students, and

several are very deficient in English and the more elementary branches of study. I cannot help repeating, what I have often before expressed, that a very imperfect acquaintance with their own language is the great defect in the youths of this College. They come to College so little acquainted with it, that they are scarcely capable of pursuing, with effect, any study. A great part of their intellectual energy is expended in mastering the language in which their studies are presented to them, and they leave College in regard to it in the condition they ought to have entered College."

Dr. Montgomery reports, "Of the remanded students Rath, Watts, and Ellis, I can scarcely speak too highly. Rath has, through the whole Session, maintained the first place in the class, being decidedly superior to Gnanamoothoo and Pursooramen.

"Watts and Ellis, especially the latter, have done very satisfactorily, and are admirable examples of the good effect of the plan of occasionally remanding students who are deficient only in application during the earlier years of their study. *Downing* has not made satisfactory progress, and does not seem anxious to improve. Of the six students who joined the class for the first time, I cannot speak very favourably as a class."

Mr. Chipperfield gives a careful analysis of the industry and attainments of the lads of the Second Class both in Anatomy and Physiology, which, as it appears in his report in the Appendix, I need not repeat here. Of the four remanded students* he speaks of Rath as industrious but slow, of Watts as having last position in his class, of Ellis as having made decided progress, and of Downing as unable to master and retain the details of Anatomy. Adverting to the remaining six students of this class, Mr. Chipperfield reports favourably of Douglas, McFarland, and Webber, and unfavourably of Currie, Marrow, and Barker. In the Physiological Class, Ellis, Rath and Downing, among the remanded students, have merited commendation; Watts is alluded to unfavourably. Of the remaining students, Douglas is alluded to in high terms of commendation; McFarland and Currie have disappointed their teacher; Webber has done fairly; Marrow and Barker have failed.

*Rath, Watts, Ellis, Downing.

At the close of last Session twelve lads of the 2nd Department were remanded; of these, Rath has obtained "approval" in Anatomy, "high approval" in Physiology, and has been named for a prize in Materia Medica, though, being a remanded student, it is against the rules of the College that he should get a prize in any class to which he has been remanded. In Medicine and Surgery he has not held his ground, but, upon the whole, the remand has done him good, and he is likely to turn out an industrious lad of fair capacity. Downing has worked fairly last Session, but he is

very deficient in intelligence. In Anatomy, Medicine, and Surgery, he has been reported as "specially deficient," in Materia Medica as "deficient," whilst he has gained "approval" in Physiology, though this is coupled with the recognition of his "defective intelligence." Watts is holding his ground, and Ellis has acquitted himself creditably.

3rd Class, 2nd Department.

In reporting upon the 3rd Class of the Second Department, Dr. Wyndowe remarks :—

"Second Department, in all nineteen students. Seven were lads remanded from last Session—of these, Garraty and Gooroosawmy have done well, Miles fairly, O'Brien and Lacey have failed completely, and the others have proved but indifferent students.

"Twelve were new students. Baker and Sunjeevee merit approval, and had Dale shown from the commencement of the Session the industry and intelligence he has displayed during the latter part of it, I would have willingly awarded him high approval ; the position he has attained in the class entitles him to the prize :—

"Jones and C. G. Roberts have done tolerably well, the remainder but indifferently.

"The conduct and behaviour of the Class throughout the Session has been generally good, the exceptions are James and Gormanly. Carew has been idle and inattentive."

Mr. Chipperfield observes of the 3rd Class lads that Gooroosawmy had maintained his place at the head of the class, that Garraty had progressed satisfactorily, that Miles, Frederick, and D'Santos had acquitted themselves but indifferently, and that O'Brien and Lacey had totally failed ; these seven lads being remanded students. Of the remaining young men constituting the class, Mr. Chipperfield speaks highly of Sunjeevee, Dale, and Baker : approvingly of C. G. Roberts and Jones ; doubtfully of Ramachundra Numby, and with disappointment of Carew, James, Thompson, S. Roberts, and Gormanly. The remarks made upon the same lads in his Physiological report by Mr. Chipperfield correspond very closely with the above, which have been recorded of the Anatomical Class.

The annual class examinations give the following results affecting the 2nd and 3rd Classes of the 2nd Department :—

Second year Military Students.—Of the four remanded lads, all have done well in the oral examinations in Materia Medica, fairly in Physiology, indifferently in Anatomy, and well in Medicine and Surgery. In the written examinations they have done well in Materia Medica, fairly in Surgery, indifferently in Physiology and Medicine, and badly in Anatomy.

"Downing is the least promising of this batch.

"Of the remaining six lads in this class, Douglas has acquitted himself most creditably in his several subjects, McFarland and

Currie have done well, Marrow and Webber fairly, and Barker has failed in every subject except Materia Medica. Upon the whole, and, excepting *Downing* and *Barker*, this class has done fairly.

"*First year Military Students.*—In this class are seven remanded students. All have done well except O'Brien and Lacey, regarding whom there now appears to be no reasonable expectation that they will ever make useful public servants in the Subordinate Medical Department. Of the remaining twelve lads which compose this class, Sunjeevee, Dale, C. G. Roberts, and Baker have acquitted themselves with credit; Jones, White, and Thompson fairly, whilst S. T. Roberts, Ramachundra Numby, Carew, and James, have failed, and Gormanly has been rated as "very bad" alike in his oral and written examinations.

The conduct of the Second Department students has been unexceptionable. There are, it is true, eight entries in the Black Book against them, but these represent only four offenders, all of whom have, on other grounds, been recommended for discharge.

It is proposed that the following lads of the Second Department be remanded :—

J. Barker and S. White ; and that the following students be removed from the service, as never likely to prove efficient public servants :—

M. Downing, D. O'Brien, W. E. Lacey, A. Carew, H. A. James, W. Thompson, S. T. Roberts, P. Gormanly.

7. Junior Department.

The 1st Class of the Junior Department, consisting of thirty-one lads, has been passed by the Final Examination Committee with the following remarks :—" In their examination of this Department, the Committee bore in mind that 'these men are not employed or paid as Doctors competent to treat serious diseases,' and their 'duties are or ought to be of a very mechanical nature.'* The standard of examination was consequently fixed very low, but even that low standard, though reached by some of the pupils, was barely reached by most, and not approached by others. In passing the whole class of thirty-one members out of the College, it therefore behoves the Committee to state that, though able to perform the minor and mechanical duties of a hospital under the directions of a Medical Officer, these young men are quite unfit to be trusted with the Medical charge of even a Naigue's guard. Their knowledge of the theory and practice of Surgery and Medicine is exceedingly scanty, and many years of accurate observation and diligent study in a hospital will be necessary to qualify them for such responsible duties as are, at present, performed by many First and Second Dressers in the service."

* Vide Order of Government, No. 84, dated 29th March 1865, para. 7.

I am of opinion that this observation of the Final Examination Committee, though accurate in the main, is perhaps rather strongly

expressed. From repeated personal examination, under circumstances which gave the pupils more confidence, for, before the Final Examination Committee, they appeared to be panic struck, I am satisfied that the lads constituting the upper third of the class are decidedly intelligent, and have acquired a fair rudimentary knowledge of their profession. At the same time I admit that the course of education now meted out to these lads, and to be meted out under recent orders to their successors, can never, in the words of the Committee, "qualify them for such responsible duties as are at present performed by many First and Second Dressers in the service."

With reference to the 2nd Class of the Junior Department, Dr. Montgomery observes :—"Mr. Ailsworth, the Native Assistant, under whom this class was conducted, has reported as to the individual merits of the twenty-eight boys constituting this class.

"They were examined at least once a week, and I found that they were carefully and judiciously taught. The upper portion of the class was remarkably good, but four of them were found deficient, and two specially deficient.

"Of this class at least five were fully equal to the standard of acquirement of the better boys in an average class in the Second Department."

Mr. Chipperfield remarks :—"The number of students in the Anatomical Class of this Department is twenty-eight. My Assistant, Mr. Wilkins, is their instructor, and he has held thirty-two examinations in addition to his daily course of instruction. I have examined the class seven times, and the results of these examinations have shown me, 1st, that these lads have a pains-taking tutor ; and, 2nd, that many of them are lads of tolerably fair intelligence, and that they are industrious."

The results of the Annual Class Examinations of the 2nd and 3rd, or English Class of the Junior Department, may be summarized as follows :—

Second Class.—Of the seven remanded students, all have done fairly, except Murriadoss ; the remaining lads have acquitted themselves, upon the whole, creditably, except Moothookisten, Sabapathy, Majeed Khan, Swaminaden, and Appavoo.

Third Class—(English.)—This class, upon the whole, has acquitted itself indifferently. Generally speaking, they read well, spell fairly, give the meaning of terms, both ordinary and medical, with tolerable readiness, but in writing to Dictation and in Arithmetic they have proved themselves to be somewhat deficient. The greatest number of "very bad" marks occurred in "Arithmetic," and, after that, in "writing to Dictation ;" in "Geography," and in the "meaning of medical terms ;" out of thirty-six lads examined there were but three "very bad" marks, in "reading" only one, and none at all in the "meaning of words" and "spelling."

The lads of the Junior Department are quiet, orderly, and well

conducted ; no charge of any consequence appears in the Black Book against any of their names ; their chief offence consists in absenting themselves without leave from their hospital duties, and from their College classes. Loss of place in their classes, extra duty at hospital, loss of holidays during the recess, and, in more serious cases, one or two days in the Conjee house, are sufficient punishments for such trespasses. Punishment is rarely required to be inflicted a second time.

The following lads of the second and third classes are recommended to be discharged from the service, on the ground of incompetency :—

Moothookistnen........	No. 791	Syed Furreed...........	No. 731
A. Appavoo............	„ 776	Subdur Hussain........	„ 822
C. Sabapathy...........	„ 795	Mootealoo..............	„ 825
Syed Ally...............	„ 831	V. R. Narrainsawmy...	„ 833

II.—GENERAL.

8. Prizes and Medals. The Johnstone Medal has not been awarded this Session, nor has the Government Gold Medal.

It is a matter of regret that the boxes containing the consignments of Library and Prize-books have not come to hand ; the vessel by which they are expected left England in October last, and ought to have reached Madras about February, but stress of weather and repeated disasters have caused this unexpected and disappointing delay.

The list of prizemen will be read to-day, the prizes themselves will be forwarded to the successful candidates on arrival.

9. The Library. Two hundred and forty-seven volumes have been added to the Library during last year, and a considerable consignment of books is now on its way from England. A list of additions and donations to the Library is given in the Appendix.

Within the last few days Dr. Montgomery has presented no fewer than a hundred and eighty-seven volumes to the College Library. "These volumes," Dr. Montgomery observes, "comprise the works on Materia Medica and Botany which I have collected for reference, and to assist in the preparation and illustration of my lectures during the present and past Sessions. I venture to solicit that these works may be considered specially intended for the use of my successor and his pupils."

The thanks of the College have been conveyed officially to the Donor for his handsome gift, which forms but a small portion of the valuable presentation Dr. Montgomery has made to this College during the time of his connection with it. In wishing him God-speed in his new and interesting field of labor, we, as Professors, cannot forget his ability as a fellow-worker, his success as a teacher, or the deep interest he has ever shown in the welfare of

this Institution. His return among us, I am sure, will be hailed with pleasure, should the chair of Hygiene ever be erected into a separate Professorship.

Dr. Montgomery suggests that a portion of his donation of books should be added to the Students' Library. "It has long appeared to me," he remarks, "that this portion of the Library is very incomplete, and with a view to improving its condition, and in order to render it more thoroughly useful to the students, I bring to your notice the desirability of transferring to it as many works as can be spared from the General Library." What Dr. Montgomery suggests had already been done; the nucleus of a Student's Library has been formed; his donation will be added to it, and every means will be taken to make this portion of the Library of practical utility to the students. Medical officers might bear in mind the Students' Library, when, on leaving India, they find it a matter of difficulty to determine how best to dispose of their Medical works, and friends of Education generally, whether European or Native, might, by suitable additions to this branch of the General Library, confer a great benefit, at little cost, upon the students of the Institution.

10. The Museum.

A list of Pathological and other specimens added to the Museum during last year is given in the Appendix. Amongst these will be observed some valuable models of Anatomical studies, prepared by Mr. Towne of Guy's Hospital, and forwarded to the Museum by the Right Honorable the Secretary of State for India.

A large consignment of midwifery instruments and apparatus, valued at £150, has just been received. The circumstances under which this grant was given by the Madras Government are stated in last year's report. The instruments, &c., have been carefully selected by the Professor of Midwifery, and have reached Madras in a state of good preservation.

Dr Shortt has kindly presented to the College a small mineralogical cabinet, and a herbarium of cryptogamic plants from the Shevaroys.

Mr. Chipperfield has done good service to the Museum by taking upon himself the labor of arranging the collection of microscopic objects in the College cabinet. He has added to the obligations I am under to him, by preparing also, at the sacrifice of time and labor, a complete catalogue of the collection.

11. The Text Books.

Order dated 29th March 1865, No. 84, para. 14.

No satisfactory arrangements are at present in force as regards the supply of text books for the students. This question, however, has been referred by Government for the consideration and report of the Director of Public Instruction.

Assistants.—Messrs. Wood, Wilkins, Harvey, Hamilton, Ailsworth, and Watkins.

A list of Assistants and Prosectors is entered in the margin.

Prosectors.—Gregory, Tyrrell, Douglas, McFarland, Currie, and Ramanjooloo.

12 Assistants, &c.

The duties of the several Assistants were fully detailed last year.

Mr. Wood, the Assistant to the Professor of Botany and Materia Medica, conducted Dr. Montgomery's class (for broken periods of the Session, amounting, in the aggregate, to three months) during the Professor's absence from Madras on duty. Alluding to this, Dr. Montgomery observes,—"During my temporary absence from Madras on public duty, my Assistant, Mr. Wood, took charge of the pupils of the Senior and Second Department. On my return I found that the classes had, under his instruction, made exceedingly good progress. I have to record my sense of Mr. Wood's good service in this matter;" and with reference to Mr. Wood's general services, Dr. Montgomery concludes his report by remarking,—"My Assistant, Mr. Wood, has, during the last six years, been my chief support in conducting the minor details of teaching, and his natural abilities, diligence, and experience have made him a most valuable public servant. I desire to record in the strongest manner my own gratitude for his attention to the classes under me, and my sense of his good service in this College. I may add that, during his employment in it, I had not once to blame him for any single act of neglect or error of judgment."

During the past Session, Mr. Wood has delivered one hundred and thirty lectures on Surgery to the 1st Class Junior Department, and held twenty-five examinations. He has also lectured to the same class, in conjunction with Mr. Wilkins, thirty-six times on the Practice of Medicine, and has held seven examinations.

As senior Assistant, his services have been most valuable to me in conducting the various details of the College.

Mr. Wilkins, as teacher of Anatomy and Physiology, has delivered to the 2nd Class of the Junior Department one hundred and twenty-four lectures, and has held twenty-two examinations. Mr. Chipperfield, in his report, alludes to this Assistant in the following terms:—

"Mr. Wilkins, the Demonstrator of Anatomy and Curator of the Museum, has a prospect of speedy promotion to Second Apothecary. I trust that this step of rank will not necessitate his removal from his present post. His admirable knowledge of Anatomy, and his capabilities as a tutor, render it highly desirable that I should not be deprived of his services just as a change is about to be made in the College curriculum."

Mr. Chipperfield's recommendation has received my cordial support.

Mr. Harvey, who is Assistant to the Professor of Chemistry and in charge of the Laboratory, is spoken of by Dr. Wyndowe, as *follows*:—

"My Assistant, Mr. Robert Harvey, has, throughout the Session, rendered me most efficient aid."

Mr. Hamilton, the Acting Assistant in the Junior Department, has held fifteen examinations and has deliverd ninety-two lectures on Medicine during last Session. He has done justice to his subject. Mr. Blacklock refers to him in the following terms :—

"Assistant Apothecary Hamilton, the teacher of the Theory and Practice of Physic to the Junior Department, has done much good to all the classes in Medicine by his unwearied diligence in subjecting them to examinations."

Mr. Ailsworth, the Native Assistant, has directed the instruction of the Junior Department in Materia Medica and Therapeutics during the past year. In Materia Medica he gave one hundred and twenty lectures, and held thirty-seven examinations. In Therapeutics he delivered thirty-nine lectures, and held thirty-two examinations. He promises to be a laborious and pains-taking teacher.

Mr. Watkins, the English teacher in the Junior Department, has given every satisfation during the past year. His services, extending over six years in connection with this Institution, have now come to an end, for, by a recent decision of Government, the teaching of English in the Primary School is directed to be discontinued.* He has performed his difficult, and often unsatisfactory duties as English teacher in the 3rd Class of the Junior Department with patience, zeal, industry, and reasonable success. I have to express a hope that this notice of his services in connection with this Institution may attract the attention of the Director of Public Instruction.

*Order of Government, dated 29th March 1865, No. 84, para. 6.

The Prosectors have performed their duties, with one exception satisfactorily, as have also the Clerk N. Ramanatha Pillay, the Librarian P. R. Narrainsawmy Moodeliar, the Draughtsman Mooroogasan Moodeliar, and the general servants of the College.

13. Sickness.

The amount of sickness, principally of an asthenic character, among the students, having been considerable during the past Session, I requested Mr. Blacklock to furnish me with a memorandum containing an abstract of the facts, with any comments he might see fit to pass upon them. He has obligingly done so, and from his communication I gather that out of 143 students of all classes there were 105 admissions to hospital, or 73·5 per cent. There were 45 admissions or 109·5 per cent. out of 41 European and East Indian students, and 60 admissions or 67·5 per cent. out of 89 native students—56 per cent. of the cases which occurred among the European and East Indian students depended wholly or in part on Asthenia, and among the native students 38 per cent. arose from the same cause. Mr. Blacklock's letter will be found in the Appendix. It is a suggestive one.

14. Cricket Club.

The Cricket Club, established some two years ago by Mr. Blacklock, and supported by Professors and students, furnished much manly recreation of a healthy kind to the students during the first half of the Course; the natural anxiety, however, arising from approaching examinations, diminished the eagerness for the game somewhat during the last few months of the Session. Every encouragement is given to the Club, which is at present in a flourishing condition. The 1st Class lads of the 2nd Department, for obvious reasons, seemed most inclined to prosecute with spirit this manly exercise.

Assistant Apothecary W. D. Stewart, and 2nd Dresser Cajah Furreed Oodeen.

In the last report of the College the following remark appears with reference to Assistant Apothecary Stewart:—"Before concluding this part of the report, the Principal has great pleasure in alluding to the zeal and regularity with which Assistant Apothecary Stewart, of the Civil Dispensary attached to the General Hospital, attended the College classes during the Session. He also joined the examinations and acquitted himself very creditably." Since then, Mr. Stewart has prosecuted his studies with earnestness and ability, and having appeared before the Final Examination Committee he has passed a most successful examination. The subjoined remarks of that Committee on Mr. Stewart's qualifications require no comment :—

"Eleven pupils in this department of the College subjected themselves to examination, and with them 2nd Dresser Cajah Furreed Oodeen who aspired to the grade of Assistant Apothecary, and Assistant Apothecary W. D. Stewart, who, having left the Medical College after a very short curriculum of study, and found that fact adverse to his advancement, determined to place himself as soon as possible on a level with the best educated men in the service to which he belongs. He has accordingly, for the last two years, taken advantage of his appointment to the General Hospital to prosecute his studies at the College, with the view of submitting to the full and final ordeal that candidates for his grade have generally to pass. In this examination he has been pre-eminently successful. He has obtained the highest mark in every subject but one, and in that one his attainments were noted as good. His papers were exceedingly well written, and do him the greatest credit; and the Committee feel certain that few have left this College so thoroughly well prepared for practice and with such high promise of success as Assistant Apothecary Stewart. To Cajah Furreed Oodeen the same favorable testimony cannot be borne. While giving him every credit for laudable aspirations, the Committee regret that he has shewn himself so much below the standard of qualifications necessary for the position he desires to occupy."

It would be well, if those who passed out of College prematurely

as Mr. Stewart did in 1857, were afforded the opportunity of completing their proper curriculum at College as the convenience of the public service permitted. Government and its Medical subordinates would alike gain by the arrangement.

16. Historical Notice.

A short historical notice of the principal events which have occurred since the date of last report may conclude this report.

Inspector-General of Hospitals. Deputy Inspectors General MacKenzie and Inglis, the Director of Public Instruction, the Principal Medical College.

(*a.*) Under Order No. 353, dated 18th November 1864, a Committee (composed as per margin) was nominated for the purpose of considering and reporting upon points connected with the general operations and efficiency of the Medical College. On considering the report submitted by this Committee, Government, under Order No. 84, dated 29th March 1865, announced their decision. The principal points of that decision may be noted.

1. That for the 2nd* and Junior Departments, a preliminary hospital attendance of two years shall hereafter be required.

* Vide Notification issued by the Principal Inspector General, dated 22nd April 1865.

2. That a three years' Collegiate course shall be sufficient for lads of the 2nd Department, and a two years' professional course in the Primary School for students of the Junior Department.

3. That instruction in English, now given to the Junior Department, shall in future be given up.

4. That certain specified curricula laid down for the 2nd and Junior Departments shall be adopted.

5. That the subject of Hygiéne shall be entrusted to the Professor of Medical Jurisprudence.

6. That a Professor of Materia Medica shall be appointed in the place of Dr. Montgomery, whose duties as Secretary to the Sanitary Commission leave him no time for his Professorial labours.

7. That the Session shall commence, in future, on the 1st October, and terminate on the 30th of June.

(*b*). Under an Order, dated 11th April 1865, No. 92, Government appointed Assistant Surgeon George Bidie to the chair of Botany and Materia Medica, on the retirement of Dr. Montgomery.

The Governor in Council further directed* that Dr. Montgomery be informed that Government have noticed with much satisfaction the very favorable testimony which is borne to his efficiency as a Professor in the Medical College; and that he is permitted to retain his Professorship until the arrival of Dr. Bidie.

* Order No. 102, dated 26th April 1865.

(*c*). Under the authority* of the Director of Public Instruction, it has been publicly notified that candidates for admission to the Senior Department of the College shall, in future, be required to pass the General Education Test laid down for candidates for Medical degrees in the University of Madras.

* Dated 26th April 1865, No. 943.

(*d*). Mr. Boalth, who obtained his Diploma as Graduate in Medicine and Surgery last year, was appointed, on the 2nd March 1865, Sub-Assistant Surgeon and Superintendent of Vaccination. I could have wished that this young Graduate's sphere of labor had been one more purely professional, for much of a Medical man's interest in his profession depends upon the earliest impressions of his professional career.

On Mr. Evers' quitting College, one of the Lane Scholarships will become vacant. The Committee have recently raised the monthly allowance of the scholarships from Rupees 20 to Rupees 30, chiefly in consequence of the present state of the Madras market.

In concluding this report, I take the opportunity of rendering my cordial thanks to my brother-Professors for the support I have received from them during the past year. May the mutual confidence and uninterrupted harmony which have marked our intercourse as fellow-laborers long continue.

GEORGE SMITH, M. D.,
Principal.

MEDICAL COLLEGE,
31*st May* 1865.

Proceedings of a Committee of Examination of the Students of the Madras Medical College, assembled in accordance with G. O. G. No. dated 8th April 1865.

PRESIDENT.

J. E. MAYER, ESQ., Deputy Inspector-General of Hospitals Presidency.

MEMBERS.

P. GERALD-FITZGERALD, M. D., Surgeon, 4th District.

W. J. VANSOMEREN, M. D., Surgeon, 1st District.

Senior Department.—Lane student B. Evers was the only elève in this department who came up for examination, and he has acquitted himself in a highly creditable manner. In almost every subject he attained the highest mark, while his written papers discover a facility of expressing himself correctly and well, not often met with among the alumni of this College. At the instance of the Committee he dissected the neck remarkably, neatly and carefully, and the operations performed in presence of the Members

of Committee, though wanting that dexterity which practice only can secure, tested his acquaintance with practical surgery, and proved it to be very fair.

Second Department.—Eleven pupils in this department of the College subjected themselves to examination, and with them 2nd Dresser Cajah Furreed Oodeen who aspired to the grade of Assistant Apothecary, and Assistant Apothecary W. D. Stewart, who, having left the Medical College after a very short curriculum of study, and found that fact adverse to his advancement, determined to place himself, as soon as possible, on a level with the best educated men in the service to which he belongs. He has accordingly for the last two years, taken advantage of his appointment to the General Hospital, to prosecute his studies in the College, with the view of submitting to the full and final ordeal that candidates for his grade have generally to pass. In this examination he has been pre-eminently successful. He obtained the highest mark in every subject but one, and, in that one, his attainments were noted as good. His papers were exceedingly well written, and do him the greatest credit; and the Committee feel certain that few have left this College so thoroughly well prepared for practice and with such high promise of success as Assistant Apothecary Stewart. To Cajah Furreed Oodeen the same favorable testimony cannot be borne. While giving him every credit for laudable aspirations, the Committee regret that he has shewn himself so much below the standard of qualifications necessary for the position he desires to occupy.

The eleven students of the Second Department have all passed, but with very different degrees of merit. Tyrrell and Doyle are at the head of the list, while Francis has narrowly escaped rejection. Before concluding, the Committee beg to express their thanks to the Principal of the College and the Professor of Anatomy for an opportunity of testing the Anatomical attainments of this class by actual dissection. With the exception of Cajah Furreed Oodeen, the youths dissected well the parts set them, and those who were called upon to demonstrate on the dead body performed the task most creditably. The Committee recommend the continuance of this arrangement in future examinations as an efficient means of inducing the students to keep up their knowledge of so important and fundamental a subject as Anatomy.

Junior Department.—In their examination of this Department, the Committee bore in mind that "these men are not employed or paid as doctors competent to treat serious diseases," and that "their duties are or ought to be, of a very mechanical nature." The standard of examination was, consequently, fixed very low, but even that low standard, though reached by some of the pupils, was barely reached by most, and not approached by others. In passing the whole class of thirty-one members out of the College, it therefore

behoves the Committee to state that, though able to perform the minor and mechanical duties of a hospital under the direction of a Medical Officer, these young men are quite unfit to be trusted with the medical charge of even a Naigue's guard.

Their knowledge of the Theory and Practice of Surgery and Medicine is exceedingly scanty, and many years of accurate observation and diligent study in a hospital will be necessary to qualify them for such responsible duties as are at present performed by many *first* and *second* Dressers in the service.

(Signed) J. MAYER, Depy. Inspr. Genl. of Hospitals, President.
(„) P. GERALD-FITZGERALD, M.D., Surgn. 4th Dist. } Members.
(„) W. J. VANSOMERAN, M.D., Surgn. 1st District. }

MADRAS, *8th May* 1865.

(True copy.)

GEORGE SMITH, M.D.,
Principal Medical College.

Read the following letter from the Director of Public Instruction.

(Here enter 22nd June 1865, No. 1409.*)

ORDER THEREON, 21st September 1865, No. 266.

The Governor in Council does not deem it necessary to make any special remarks on the foregoing Report on the progress of the Medical College during the official year 1864-65. The general tenor of the reports of the Principal and Professors, and of the Committee who conducted the final examination of the students leaving the College, is very similar to that of the reports of the last few years, though perhaps more favorable in some respects. His Excellency in Council will look with interest to the results of the changes introduced on the recommendation of the Committee which met in November last, and which, he trusts, will prove conducive to the improvement of the College.

2. The Governor in Ciuncil requests that the thanks of Government be tendered to Dr. Montgomery for the valuable gift of books presented by him to the College Library.

(True Extract)

A. J. ARBUTHNOT,
Chief Secretary.

* Printed separately as Selection No. LXXV.

BOOKS RECEIVED.

1.—A Clinical Memoir on Certain Diseases of the Eye and Ear, by J. Hutchinson, F.R.C.S. &c............ Churchills, London.

2.—Clinical Lectures and Reports, by the Medical and Surgical Staff of the London Hospital, vol I, 1864. Do

3.—Surgery in Bengal, an address by Dr. Fayrer......... .. Calcutta, Carter.

4.—Report on the Madras Medical College, Session 1864-65 Gantz Brothers, Madras.

5.—Report on the Civil Hospitals and Dispensaries of the Madras Presidency, for the year 1864 .... Do

6.—Report on Vaccination in the Presidency and Provinces of Madras, in the year, 1864.. .... Do

7.—A Popular Lecture on Vaccination, by Dr. Shortt...... Do

8—A Treatise on the Small-pox; translated into Canarese by S. Arokeum Pillay, Second Dresser.................... Mysore Government Press.

PERIODICALS RECEIVED.

The American Journal of the Medical Sciences to *October* 1865.
The Edinburg Medical Journal to *November* 1865.

INDEX.

Page.
ninal Aorta, Mr. Stewart's case of Rupture of 138
ss of the Liver, Mr. Croudace's case of 357
and Subacute Dysentery, Mr. Chipperfield's cases of 360
Hepatitis, Mr. Chipperfield's case of...... 148
alty, Report of the Committee at the 384,391
eral and Medical Topographical Report of the Madras
trict 222
l Report of the Engineer Establishment, Upper
lavery 294
l Report of the Madras Med. College, Session 1864-65 398
ecaries' Society of Madras 190
and Navy Medical Services 203,384
eum Pillay's translation into Canarese of Treatise on
ll-pox .. .. *Review* 346

r, Mr., Report on Typhoid Remittent fever at Bangalore 285
lore, a Chalybeate Spring at 175
—— Typhoid Remittent fever at 285
s how to work with the Microscope ......*Review* 343
me, Capt., Notes on the snakes of the Madras Presidency 207
npore, Extract from Annual Report of Civil Dispensary
.... 356
received 419
ick, Dr., on some of the dangers of Phimosis 208

r of the Uterus, cases of, by Dr. Shortt 141
eate Spring at Bangalore 175
eput, Dr. Shortt's account of 239
erfield, Mr., case of Acute Hepatitis 148
—————— Typhoid fever 157
—————— Extracts from Medical Journals of the
eral Hospital 360
or, Extract from the Annual Report of the Civil Dis-
sary at 351
a, Chlorodyne as a remedy for 353
——, Dr. J. Houston on 313
Hospitals, Government Order on Report on 197
Surgeons, pay of 202
ill, Mr., case of Paralysis of the Tongue 356
eram, Dr. Shortt's account of 228

Page

Contributions to Ophthalmic Medicine and Surgery, by Dr. G. Smith ....
Croudace, Mr., case of Abscess of the Liver 35

Davies, the preparation and mounting of Microsopic objects .... *Review* 34
DeFabeck, Dr., Penetrating wound of Intestine 35
District of Madras, Topographical report of 22
Diseases of the Eye, introductory remarks to a course of Lectures on, by Dr. G. Smith 268
Diseases of the Eye and Ear, consequent on inherited Syphilis, Mr. J. Hutchinson on ...... *Review* 126
Dysentery, Acute and Subacute, Mr. Chipperfield's cases of 360

Engineer Establishment, Upper Godavery, annual report of 294
Extract from annual report of CivilDispensary at Berhampore 356
——————— Chittoor 351
——————— Salem 352
——— Medical Journals of the General Hospital, Madras 360
——————— Native Infirmary 348

Fayrer, on Surgery in Bengal ...... *Review* 134
Fever, Typhoid, case of 157
——— Remittent at Bangalore 285

General Hospital, Madras, Extracts from Medical Journals of 148,157,360
Government Order on the Civil Hospitals of Madras 197
——— on annual report of Madras Medical College 418

Hæmatemesis, Dr McAllum's case of 144
Hand-book of Uterine Therapeutics, Dr. Tilt...... *Review* 125
Hepatitis, Acute, fatal case of 148
Hill and Plains Stations, Dr. Macbeth's special report on ... 62
Hodges on Puerperal Convulsions ...... *Review* 130
Honors to French Medical Students 396
Houston, Dr. J., annual report of the Engineer Establishment, Upper Godavery 294
How to work with the Miscroscope, Dr. Beale ...... *Review* 343
Hutchinson on Diseases of the Eye and Ear, consequent on inherited Syphilis ....*Review* 126

Introductory remarks to Lectures on Diseases of the Eye...... 268
Ischuria, Dr. vanSomeren's cases of 348

King, Dr. H., American Notes...... 44,324

Page.

Lecture on Vaccination, by Dr. Shortt ...... *Review* 133
London Hospital, Clinical Medical Reports. *Vol I.* *Review* 331

Macbeth, Dr., Special Report on Hill and Plains Stations ... 62
Maclean, Dr., Treatise on Small-pox, translated into Canarese. *Review* 346
Mackay, Dr., Note on insusceptibility of Fœtus in Utera to Small-pox. 356
Madras Apothecaries' Society 190
———District, Topographical Report of 222
———General Hospital, cases treated at 148,157,360
———Medical College, changes at 203
——————Annual Report of, 1864-65 398
———Native Infirmary, cases from Journal of 348
Mayer, Mr., Note on the Magnetic Oxide of Iron as a means of purifying water 215
McAllum, Dr., case of Hæmatemesis 144
Medical Department of the Army and Navy...... 203,384,391
Medical Intelligence ... .175,384
———Miscellany 138,348
Meteorological Report for the year 1865 ....163 to174
——————for the 1st Quarter 1866 381

New Sydenham Society 193,393
Note, by Dr. Mackay 356
——on the Magnetic Oxide of Iron by Mr. Mayer 215
Notes, American, by Dr. H. King 44,324
——by the Editor 147,355
——on some of the Snakes of the Madras Presidency 207

Order of Government on Annual Report of Medical College... 398
——————Report on Civil Dispensaries 197

Paralysis of the Tongue, Mr. Cockerill's case 356
Pay of Civil Surgeons 202
Periodicals received 419
Peritonitis, Mr. Chipperfield's cases of 376
Puerperal Convulsions, Dr. Hodges ...... *Review* 130

Report, Annual, of the Madras Medical College, 1864-65 308
——————of Civil Dispensary at Berhampore, Extract from 356
——————————Chittoor do 351
——————————Salem do 352
Report of the Engineer Establishment, Upper Godavery...... 294
———General and Topographical of the Madras District... 222
———of the Committee at the Admiralty. 384,391

Page.

Report on Civil Hospitals and Dispensaries, Madras, 1864... 19
———on Typhoid Remittent Fever at Bangalore. 28
———on Vaccination, Madras, for 1864 . ....*Review*. 13
Reports, Meteorological for the year 1865... ......163 to 17
——————————for 1st Quarter 1866 381,38

Reviews.

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Page.

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Surgery in Bengal, an Address to the Bengal Branch of the British Medical Association. By J. Fayrer, M. D., F. R. S. E., &c. &c. Calcutta, Cutter. 1865. 8vo. pp. 32. 134
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Salem, Extract from Annual Report of Civil Dispensary...... 352
Shortt, Dr., Cases of Cancer of the Uterus...... 141
——————General and Medical Topographical Report of Madras District 222
——————Popular Lecture on Vaccination. ......*Review* 133
Smith, Dr. G., Contributions to Ophthalmic Medicine and Surgery, third series...... 1
——————Introductory remarks to Lectures on Diseases of the Eye. 268
Society, Madras Apotheacries' Proceedings of... 190
————The New Sydenham. 193,393
Stewart, Mr. L. W., case of Rupture of Abdominal Aorta. 138
Stree Ramooloo Naidoo, on Chlorodyne in Cholera. 353
Surgery in Bengal, Dr. Fayrer's Address on ......*Review* 134

" They manage these things better in France"... 396
Tilts' Hand-Book of Uterine Therapeutics, 2nd Edition. *Review* 125
Treatise on the Small-Pox, translated into Canarese...*Review* 346

Uterus, Dr. Shortt's cases of Cancer of 141

Vaccination, Dr. Shortt's Lecture on... ...... *Review* 133
——————in the Madras Presidency, report on. ...*Review* 132
VanSomeren, Dr., cases of Ischuria 348

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